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FACULTY OF SOCIAL SCIENCES
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Who wins and who loses due to financial secrecy? The Net Bilateral Financial Secrecy Index.

Bachelor thesis

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Declaration of Authorship

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Prague, 10th May 2019

Lucie Kamenicka

Abstract

Recently, world leaders are making efforts to finally gain control over the issue of tax havens and financial secrecy through various policy measures. Thanks to combating financial secrecy, tax fairness is slowly being achieved which enables jurisdiction to collect tax revenue which they lose due to the existence of secrecy jurisdictions. In my thesis I update and extend the existing research concerning bilateral approach of empirical identification of tax havens' financial secrecy and based on it I quantify for 111 countries the secrecy they supply and for 82 countries the secrecy they receive. Next, I primarily quantify which jurisdiction wins or loses due to secrecy by developing the Net Bilateral Financial Secrecy Index and estimate it for 68 jurisdictions by setting for each country the financial secrecy received and supplied against each other. Then, I focus on working with the established Net BFSI and I based on it conclude several findings, and also analyse how the Net BFSI changed during recent decade. Subsequently, I assess how international organizations and particular countries are successful in targeting the jurisdictions most benefiting from the secrecy with their policies, I evaluate their recent policy measures using my results of the Net BFSI, and I suggest how they could improve. I asses two most recent EU lists of tax havens and two global lists, as well as the engagement of countries in Automatic Exchange of Information by March 2019.

JEL Classification	F36, F63, F65, H26, O16
Keywords	Financial Secrecy, tax haven, tax evasion, secrecy jurisdiction
Title	Who wins and who loses due to financial secrecy? The Net Bilateral Financial Secrecy Index.

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Abstrakt

V poslední době světoví lídři významně usilují o získaní kontroly nad daňovými ráji. Díky opatřením přijatým proti finančnímu tajemství, je postupně dosahována větší daňová férovost, která umožňuje jednotlivým jurisdikcím získávat daňový příjem, o který díky existenci daňových rájů přicházejí. V mé práci aktualizuji a rozšiřuji výzkum týkající se bilaterálního určení míry finančního tajemství daňových rájů a na jeho základě kvantifikuji objem přijatého finančního tajemství pro 111 jurisdikcí a objem poskytovaného finančního tajemství pro 82 jurisdikcí. Poté také primárně kvantifikuji, které jurisdikce díky finančnímu tajemství profitují a které naopak tratí, a to pomocí Čistého bilaterálního Indexu finančního tajemství, který jsem pro tento účel vytvořila, a to porovnáním objemu přijímaného a poskytovaného tajemství celkem pro 68 zemí. Dále v mé práci hodnotím, jak úspěšně mezinárodní organizace a jednotlivé státy zaměřují svoji strategii proti jurisdikcím, které z finančního tajemství profitují nejvíce a ohodnocuji jejich některá nedávná opatření porovnáním s výsledky mnou vytvořeného indexu. Tímto způsobem posuzuji seznamy daňových rájů zveřejněných Evropskou komisí a další dva mezinárodní seznamy. Následně také hodnotím zapojování jednotlivých států do automatické výměny informací k datu březen 2019.

Klasifikace JEL	F36, F63, F65, H26, O16
Klíčová slova	Finanční tajemství, daňové ráje, daňový únik, secrecy jurisdiction
Název práce	Kdo vydělává a prodělává na finančním tajemství?
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Acronyms

AIE Automatic Exchange of Information

BEPS Base Erosion and Profit Shifting

BFSI Bilateral Financial Secrecy Index

BSW Bilateral scaled weights

CPIS Coordinated Portfolio Investment Survey

CRS Common Reporting Standard

DTC Double Tax Convention

EC European Commission

EU European Union

EOIR Exchange of Information on Request

FSI Financial Secrecy Index

GSW Global scaled weights

IMF International Monetary Fund

MCAA Multilateral Competent Authority Agreement

OECD Organisation for Economic Co-operation and Development

OFC Offshore financial centre

SS Secrecy score

SJ Secrecy jurisdiction

TIEA Tax Information Exchange Agreement

TJN Tax Justice Network

AIE Automatic Exchange of Information

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Bachelor's Thesis Proposal

Author	Lucie Kamenická
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Proposed topic	Who wins and who loses due to financial secrecy? The Net Bilateral Financial Secrecy Index.

Preliminary scope of work:

The Financial Secrecy Index is a ranking that measures each jurisdiction's contribution to global financial secrecy in a way that highlights harmful secrecy regulations.However, different secrecy jurisdictions specialize in providing services to the citizens of different countries, and thus are important for different countries to a varying extent. To account for this heterogeneity, Janský and Palanský (2018) developed the so-called Bilateral Financial Secrecy Index which estimates a ranking of the importance of each secrecy jurisdiction for each country. Who wins and who loses out due to financial secrecy? What do these countries have in common?

Research question and motivation

In my bachelor thesis I will analyse which secrecy jurisdictions harm individual countries the most by examining the relationship between selected jurisdiction and its secrecy jurisdictions. Although my thesis will be based of the Financial Secrecy Index (FSI), which is a "measure of each jurisdiction's contribution to the global problem of financial secrecy" (Tax Justice Network 2018), I will be working more with the Bilateral Financial Secrecy Index (BFSI), which specifically aims to identify secrecy jurisdictions for specific countries, bilaterally (Janský, Meinzer, Palanský 2018). On the basis of the BFSI, I develop the Net Bilateral Financial Secrecy Index which will enable a deep analysis of each secrecy jurisdiction's overall contribution to the global financial secrecy on both the supplying and the receiving side. Further, I would like to compute several alternative versions of BFSI based on other data than Janský, Meinzer,

Palanský used in their work, and use the Net BFSI to test the following hypotheses: 1) Countries that have a higher net BFSI are more successful in attracting foreign bank deposits. 2) Countries with a high Net BFSI have lower corporate tax rates than the countries with which they directly compete for foreign capital; and 3) Countries with higher Net BFSI are more often perceived as tax havens because they are often listed on blacklists of different studies and international organizations. Based on all these results, I will then estimate which countries win and which lose out due to financial secrecy.

Contribution

My thesis will give new insights in analysing financial secrecy. From the results of my thesis we will be able to recognize not only how much the particular tax haven is used by the entities from other countries, but also how much the entities from particular tax haven use on contrary the other jurisdiction as a tax haven. After providing these calculations where this bilateral usage of the secrecy jurisdiction will cancel out. Therefore, the Net Financial Bilateral Index will much more precisely indicate how truly harmful the particular jurisdiction is. Further, through computing different alternatives of the Net BFSI based on different data, I will broaden, affirm and ameliorate my results to discover who truly wins or loses due to the financial secrecy. Hopefully my bachelor thesis will contribute to the literature by providing additional evidence about the role of secrecy jurisdictions, which can help the anti-offshore policy throughout the world to truthfully recognize how important and harmful the secrecy jurisdiction of the particular country is, not only for the purpose of making better tax haven blacklists.

Methodology

Since the FSI is a well-established indicator in both policy and academic discourse (Cobham, Janský, and Meinzer 2015) as well as the Bilateral FSI, I will maintain this methodology. The FSI is composed of two parts, which are called secrecy scores (SS) and global scale weights (GSW). Whereas the BFSI is composed of also SS and BSW, so it uses the same information for secrecy scores as published in the 2018 version of the FSI, but the second part is not the GSW, but the bilateral scale weight (BSW) specific for each country. BSW is based on the IMF's 2015 data on total portfolio investment as an approximation for financial services exports. By comparing the BFSI supplied and the BFSI received I will compute the Net Bilateral Financial Secrecy Index.

Further, I will focus on developing alternative versions of BFSI and then the Net BFSI subsequently by using other data than the IMF's 2015 data on total portfolio investment. The data I will use are for example: for foreign direct investment from IMF Coordinated Direct Investment Survey, for foreign bank deposits from Bank for International Settlements Locational Banking Statistics or also KPMG corporate tax rate tables. Using this data, I will test my previously mentioned hypotheses.

Outline

1. Introduction to the topic, basic definitions (Tax haven, Financial Secrecy Index, Bilateral Financial Secrecy Index)
2. Literature review
3. Empirical part
   3.1. Data description, used methodology (computing Net Bilateral Financial Secrecy Index and the alternatives of the original Bilateral Financial Secrecy Index)
   3.2. Data analysis
   3.3. Testing hypotheses (which I have mentioned earlier)
4. Results
5. Conclusion

List of academic literature:

Janský, P., Meinzer, M. Palanský, M., 2018. "Is Panama really your tax haven?: Secrecy jurisdictions and the countries they harm". Tax Justice Network / Utrecht University.

Cobham, A., Petr J., and Meinzer, M. 2015. "The Financial Secrecy Index: Shedding New Light on the Geography of Secrecy." Economic Geography 91 (3): 281–303. https://doi.org/10.1111/ecge.12094.

Tax Justice Network. 2018. "Financial Secrecy Index 2018: Methodology." Tax Justice Network. http://www.financialsecrecyindex.com/PDF/FSI-Methodology.pdf

Schjelderup, G. 2015. "Secrecy Jurisdictions." International Tax and Public Finance, Forthcoming; NHH Dept. of Business and Management Science Discussion Paper No. 2015/12. Available at SSRN: https://ssrn.com/abstract=2576228 or http://dx.doi.org/10.2139/ssrn.2576228

Johannesen, N. and Zucman, G. 2014. "The end of bank secrecy? An evaluation of the G20 tax haven crackdown." American Economic Journal: Economic Policy, 6 (1). pp. 65-91. ISSN 1945-7731

Chapter 1

Introduction

Although the term "*tax havens*" is nowadays part of the common knowledge and it is widely used in various debates (around issues of *offshore tax evasion* and *illicit financial flows)* on the academic field, any consistent and agreed definition of the term is absent (Tax Justice Network 2018). Probably this lack of consistency in the definitions is creating the shortage of strictly defined policy against the tax havens which are nowadays a serious global issue. Solving the problem with tax havens and the *financial secrecy* in general became one of the aims of majority of governments and international organization, since increasing technological progress facilitates investing money offshore, so more and more entities are making use of *bank secrecy* and *offshore financial centres* in order to hide their investments from taxation.

Even though after the global crises significant progress has been made in making legal structures and financial transactions more transparent, recent offshore data leaks have proven that the fight against financial secrecy is definitely not over. On basis of evidence from the Panama papers, O'Donovan, Wagner & Zeume (2019) estimated that at least 1 in 7 companies have offshore secrets. And research from 2018 claims that globally the equivalent of 10% of world GDP is deposited in secrecy jurisdictions (Alstadsæter, Johannesen & Zucman 2018). Therefore altogether, the process of tackling financial secrecy and tax havens is for long haul. It is happening due to the international collaboration of not only governments but also international institutions, business and researchers, which are contributing to the system by providing proves against various issues connected to tax havens useful for policy makers and among which I intend to join with this thesis.

I aim to contribute to the strand of literature identifying harmful *secrecy jurisdictions* respectively for various countries. I define *harm* as an increase in the risk of existence of illicit financial flows, such as Cobham, Janský & Meinzer (2015) and Janský, Meinzer & Palanský (2018) in their papers. One of the widely used and well-established index for determining tax havens and financial secrecy in the recent past is an index called *Financial Secrecy index (FSI)* created by Cobham, Janský & Meinzer (2015). Since also the term tax haven is comparatively demanding to define as a result of globalization, integration and the existence various bilateral relationships among the majority of numerous jurisdictions, the statement from Picciotto (1992) that "virtually any country might be a 'haven' in relation to another" is rather truthful. It represents one of the main reasons for the establishment of *Bilateral Financial Secrecy Index (BFSI)*, which is a direct country-specific extension of FSI thanks to which each jurisdiction main tax havens can be inspected (Janský, Meinzer & Palanský 2018). In order to obtain the proper measure of harmfulness of the each jurisdiction such both indexes above, I do not only need the measure of the intensity of the *financial secrecy* of the country, but also some kind of the measure of strength of the relationship between two jurisdiction (Janský, Meinzer & Palanský 2018).

By implementing a complex economic approach and the data set by the *International Monetary Fund (IMF)* called *the Coordinated Portfolio Investment Survey (CPIS)*, this thesis extends the research by Janský, Meinzer & Palanský (2018) . Using a similar, but updated and longer time-frame data set, I replicate the *the Bilateral Financial Secrecy Index (BFSI)*. Since tax havens are very current topic, it is important to keep the evidence against the financial secrecy as strong as possible. Therefore, the most current version as possible is needed as it can also provide possible evidence for the policymakers to fight against tax havens. After creating the updated version of BFSI and comparing it to its older version, I will precisely develop the indexes *BFSI Received* and *BFSI Supplied* specifically for each country, which estimates the values of secrecy received for 82 countries and supplied for 111 countries. On basis of those indexes I conclude several findings about how the top secrecy jurisdictions for particular countries changed in the past 2 years, how much and to how many countries investors from particular state invested, and which jurisdictions supplies or on the other hand receives most of the secrecy, as well as which world regions do.

Most importantly, I develop an index quantifying if the particular country generally wins or looses due to the financial secrecy. Since nowadays almost all countries meet financial secrecy in some form, but it does not mean that these countries are just purely benefiting from it, but can also loose because of it. My aim is so that policy makers could straightforwardly recognize if any particular country truly wins or looses due to financial secrecy using just one index. That is why I have developed the *the Net Bilateral Financial Secrecy Index (Net BFSI)* which compares the secrecy received and supplied for each country. I have developed the methodology of this index on the basis of BFSI, since it represents one of the very few systematic bilateral approaches to financial secrecy quantifying all countries. The topic of financial secrecy and its empirical identification is generally hard to process, and even more on the bilateral level. Understanding all indexes previously mentioned as well as the logic behind it is crucial in order to truly make the most out of the data and the methodology to establish the Net BFSI correctly. Overall I conclude which jurisdictions looses and which wins due to the secrecy, and on basis of that I conclude several findings, and also by analysing how Net BFSI varied in the recent decade I discover the changes in favourableness of secrecy for various jurisdictions indicating possible changes the jurisdiction's level of financial secrecy or tax systems.

I find the Net BFSI useful for assessing policies of governments and international organizations, to identify if these policy makers are targeting truly the jurisdictions which are benefiting the most from secrecy, since they are primarily the one with which should be dealt with. Firstly, I evaluate the EU lists of tax havens, as well as two renowned global lists of tax havens, to asses if they have listed the jurisdictions winning the most thanks to secrecy and I also suggests at which secrecy jurisdictions they should aim in order to stop losing because of secrecy. Secondly, I also analyse if that the jurisdiction which are winning more due to secrecy tend to have lower tax rates, since the taxes are one of the main indicators of tax havens in the past. Finally, I evaluate the Automatic Exchange of Information from March 2019 which is the newest policy measure against tax havens which should finally defeat secrecy according to various international organizations. I conclude if countries are actually targeting the most harmful secrecy jurisdictions with their AIE treaties by March 2019, and thanks to the established Net BFSI I am able to conclude if several

countries are not targeting its main secrecy receivers on purpose or unintentionally. Also primarily, I analyse if the jurisdiction benefiting most from the secrecy are less likely to cover the secrecy supplied by AIE treaties and also if the jurisdiction losing due to secrecy are more likely to cover the secrecy received by AIE treaties.

The thesis is organized in 6 more chapters. Chapter 2 provide the theoretical concepts about tax havens, and reviews the existing literature on tax havens, financial secrecy, and the policies against tax havens. Chapter 3 presents detailed information on the methodology used for developing the Net Bilateral Financial Index, also the methodology of indexes on which it is based, as well as the methodology for evaluating several policies concerning the tax havens. Chapter 4 describes the data and its sources used for developing the indexes, as well as data on lists of tax havens, corporate tax rates and on automatic exchange of information. Chapter 5 presents the results of the updated and also of newly created indexes, primarily of the Net BFSI, as well as presents several findings based on them, it also provide evaluations of the recent policy measures using the Net BFSI. Chapter 6 concludes and mentions the contribution of this thesis.

Chapter 2

Literature review

2.1 Tax havens

2.1.1 Issue of Tax Havens and its definitions

As I am mentioning in the introduction any consistent and agreed definition of the term "tax havens" is absent, even though it is nowadays part of the common knowledge and frequently used by academics. Throughout the history the two other terms, "secrecy jurisdictions (SJ)" and "offshore financial centres (OFC)" were developed, both closely related to the term "tax havens". They are often used as synonyms, even though the purpose of creating terms OFC and SJ was to solve the lack of definitional consistency issue. That is why I am going to describe the history and purpose of creation of these terms as well as the academic background of this issue, since I am working with these terms throughout my thesis.

Unfortunately, all of three terms are not defined intelligibly, since each term is defined differently by various academic sources throughout fields and even the definitions of economists varies. This lack of consistency of definitions according to Cobham, Janský & Meinzer (2015) lead to "important and systematic weaknesses in the resulting analysis whether in international political economy, economic geography, or international economics". But overall, it could be said that there are approximately 30-60 of these offshore jurisdictions in a world, and also that they are mostly sovereign countries (Larudee 2009). This number corresponds also to Dharmapala & Hines (2007) findings, since they mention in their paper that "roughly 15% of countries are tax havens; as has been widely observed, these countries tend to be small and affluent". However, some caution

is needed while working with the word country or state, since not all jurisdiction, which are perceived as secretive or which are listed in various list of tax havens, must be particularly sovereign countries. They can be also overseas territories or other parts of some state with another legislative, as for instance British Overseas Territories, The British Crown dependencies or Dubai and Delaware. For them the term jurisdictions should be used.

Since these three terms connected to tax havens vary, I would like to precisely describe their crucial dissimilarity. One of the differences between them is that the term "tax havens" is, since it was the first one used throughout the history, unlike the other two connected more to taxation (tax avoidance, tax rates) rather than to the secrecy generally. A possible indicator of this fact is the word "tax" in the name of the term. As a proof I present some definitions of the term "tax haven" from the 20th century. Hampton (1996) defined a tax haven as "a jurisdiction that has no or at best, low, direct and indirect tax rates compared with the other jurisdictions." Another less tax-related definition from this period by Hines & Rice (1994) is: "a location with the following four attributes: (i) low corporate or personal tax rates; (ii) legislation that supports banking and business secrecy; (iii) advanced communications facilities; and (iv) self-promotion as an offshore financial centre." But overall as Gravelle (2010) mentions in its paper, in the past several economists defined tax haven as "any low-tax country with a goal of attracting capital, or simply any country that has low or non-existent taxes." Therefore, in 1998 OECD has newly officially defined the term tax havens as also connected of the financial secrecy, it defined key factors of being a tax haven as: (a) "no or only nominal taxes", (b) "lack of effective exchange of information", (c) "lack of transparency", and (d) "no substantial activities" (OECD & OCDE 1998, p. 23).

According to Cobham, Janský & Meinzer (2015), since the term tax haven was generally perceived as outdated and too focused primarily on tax measures, economists such as Roberts (1994) started to use newer term called "Offshore financial centres". The term OFC should cover more directions of the secrecy, since it is defined by Roberts (1994) as "a jurisdiction that has a deliberately less-regulated and less- (or un-) taxed financial sector and offers a range of financial services". Zoromé (2007) also defines OFC similarly as well as generally discusses the definitional issue. On the other hand, some economics such as Murphy (2008) did not see any major difference between the two terms.

Another major difference which separates these three terms into two groups is a dichotomy trap. Both terms "tax havens" and "offshore financial centre" are alike in this direction since they both experiences the dichotomy trap, because both of them are not measurable. As an Oxford professor Wójcik (2013) mentions in his paper, the fact of being offshore jurisdiction is a matter of degree not a matter of one-wold answer. Only the term "secrecy jurisdictions" do not suffer from the dichotomy trap, since it can be measured by its definition which is a significant benefit in comparison with the two others. The reason for it is the way the term was established by Murphy (2008). It is composed of two measurable key characteristics: (i)"The secrecy jurisdiction creates regulation that they know is primarily of benefit and use to those not resident in their geographical domain" and (ii) "The creation of a deliberate, and legally backed, veil of secrecy that ensures that those from outside the jurisdiction making use of its regulation cannot be identified to be doing so" (Murphy 2008, p. 6). He also mentions in his article that the emphasis on secrecy is important, since it permits the investors from abroad to legally benefit from immoral actions.

Since only the term "secrecy jurisdiction" have quantitative approach and also focuses mainly on secrecy, this term also was chosen by Cobham, Janský & Meinzer (2015) while creating the Financial Secrecy Index (FSI). As described by its authors Cobham, Janský & Meinzer (2015) it determines a "critical, geographic and policy-relevant perspective on the issues of offshore finance and tax havens". This approach of identifying secrecy jurisdictions is showing each country on a spectrum of secrecy and global secrecy contribution rather than dividing countries precisely into tax havens and non-tax havens. Similarly using the original approach of FSI, Janský, Meinzer & Palanský (2018) added a bilateral country pair analyses for establishing Bilateral Financial Secrecy Index (BFSI). I further describe the FSI as well as BFSI in methodology and data section, since they are important and increasingly used indexes regarding secrecy by both academics and policy makers, and I on its basis create all the further indexes (Updated BFSI, BFSI Supplied, BFSI Received, Net BFSI).

While creating the indexes, quantitative measure (more precisely the global scale weights or the bilateral scale weights) is essential, although it emphasises the bigger tax havens while having the same quality of the secrecy. It is done rightfully since bigger tax havens have more options how to deceive tax

authorities than the small ones. That is the reason why the creation of FSI was so crucial, since some "tax haven lists" before put mainly the emphasis on smaller secrecy jurisdiction, which created the world-wide renowned perception of tax havens as a "couple of small islands", although the secrecy and the injustice they provide can be almost negligible in global scale (Tax Justice Network 2018). Therefore, all indexes and various studies reflecting the fact that tax havens can be also large developed countries are needed. Since the more research will be done on this topic, hopefully the less will be tax havens perceived by public as a group of small islands. Also, terms "tax havens" and "offshore financial centre" are helping the image more than the term "secrecy jurisdiction", since these terms are older and more connected to the outdated popular perception of tax havens.

The reason why tax havens are primarily perceived as small paradise islands might be the problem of subsidiaries of multinational corporations being situated in small islands. Since generally economies and governments of small paradise islands focused mainly on the financial sector, from which they profited thanks to offshore investments, and neglected the other sectors. From which emerges their dependence on offshore activities. Therefore the transformation of the tax systems of these jurisdictions to the international standard tax systems in order to become non-tax havens is rather demanding (Hampton & Christensen 2002). Schjelderup (2015) in his paper proves that the developing countries are more harmed by secrecy jurisdictions than developed ones, because of weak institutions and greater necessity for tax revenue.

As Cobham, Janský & Meinzer (2015) mentions there exist another approach to secrecy jurisdictions, which is evaluating the tax haven-ness of the country by "the degree to which it is able to attract the tax base of economic activity that takes place elsewhere". On basis of this approach the policy process from OECD called the Base Erosion and Profit Shifting (BEPS) was created in 2015 at command of the G8 and G20. The action plan of BEPS is composed of 15 actions which intent to provide both domestic and international instruments concerning tax avoidance primarily to make sure that taxation of the profit is made rightfully in the jurisdiction where the real economic activities took place and the value was created (OECD & OCDE 2013). Generally, BEPS also likely represents the greatest change of corporate income tax in a long time, since the corporate income taxes has not experienced any structural

changes since 19th century (Barreix, Roca & Velayos 2016). Overall, despite the differences I will not differentiate between all these three terms in my thesis, as well as renowned economists did in their various articles, as for instance: Tax Justice Network (2018), Janský, Meinzer & Palanský (2018), Schjelderup (2015).

2.1.2 History of Tax havens

Several academics in the past have studied the inceptions of the tax avoidance and its history in order to understand the issue of tax havens. While looking at the far history for instance Gordon (1981) saw the beginnings of tax havens in the ancient Greece. According to Palan, Murphy & Chavagneux (2010) the true establishment of tax havens was connected to creation of modern economy in the late 19th century. The first forms of tax havens arose in Delaware and New Jersey. The European countries followed the United States' trend and Switzerland took over the offshore role. Later, in 1920s a first real tax haven receiving funds from abroad called a Zurich-Zug-Liechtenstein triangle was established. At the same time one of the symbols of a modern economy, the concept of new multinational corporation with a possibility of not taxing the its residency was developed in Britain. This concept is one of the pillars of the offshore world as we know it today.

Subsequently, as also Palan, Murphy & Chavagneux (2010) mention that in late 1950s with arrival of the Euromarket the British Empire also became a centre of offshore economy as Switzerland. The City of London, the main centre of European common market, together with British dependencies is likely to be perceived as the first and also very popular offshore financial centre. Its beneficial conditions have attracted various entities also outside of the Euromarket for the purpose of tax evasion. This popularity of offshore economy made the Unites States and Japan develop their own OFC, as for example in USA's Caribbean Islands. These processes created the basis for further illicit offshore activities.

Later, after the World War II according to Zucman (2016) the tax haven's situation has changed because of lack of costumers, collapse of financial markets and inflation. The aftermaths of the war were devastating for the whole Europe except from Switzerland. For the first time since 1914, the value of

hidden wealth between years 1945 and 1950 decreased. Even in 1970s many European jurisdictions including London have not fully recovered from the war, that is why Switzerland was still primarily used as an international system benefiting from these offshore activities. Therefore, it could be said that nothing changed significantly from 1920s, since the only jurisdiction offering protection of banking secrecy was Switzerland. For that reason, Switzerland could afford as a monopoly to double the tariffs on foreign deposits during 1940-1983. Even later widely used tax havens such as Singapore and Cayman Islands did not compete against each other since the significant number of banks situated there were new branches of the Swiss bank. (Zucman 2016)

During last decades the problem of tax havens and the problem expanding offshore world deteriorated and became more serious. The possible explanation for it is the technological progress. Thanks to new inventions the movements of investments from individuals to tax havens, and the movements in the financial markets, as well as the movements of asset or liabilities from corporations to tax havens has been facilitated. Due to the technological process the offshore transactions especially between two distant countries became possible and also by far easier. Another possible factor of the expansion of tax havens is globalization. Globalization makes almost impossible for any particular country to be inaccessible by other states or not integrated with the world. The process of globalization also eliminates the differences between various countries and their legislation, that is why it is easier for individuals or corporations from one country to use other countries as tax havens with additional costs being eliminated. Both causes are also mentioned Zucman (2014) in his paper, generally thanks to them it become easier for both individuals and corporations to place their wealth abroad, to shift profits and funds, or to make also other activities supporting the existence of tax havens.

2.2 Financial Secrecy

Generally, all of the terms, "tax havens", " secrecy jurisdiction" and "offshore financial centre" are likely to be perceived negatively, since they according to majority of the population represents a place were illegal practices such as tax evasion, illicit financial flow, money laundering and others can arise. Although lately some economists are trying to also look at this terms positively by looking at its consequences. Such as for instance Dharmapala (2008) who in his paper mentions that the existence of disproportionate fraction of the world's foreign direct investment (FDI) in tax havens does not make the jurisdictions with high taxes worse of. He also claims that the existence of secrecy jurisdiction might ameliorate efficiency and reduce tax competition, under some circumstances. In general the majority of studies on tax havens analysis FDI and tax rates, as also Dharmapala (2008), or are working with FDI and profit allocation, such as Dowd, Landefeld & Moore (2017). Also Desai, Foley & Hines (2005b) contributed to the strand of literature which is positively viewing tax havens by proving that generally secrecy jurisdiction's activity enhances activity in nearby non-secretive jurisdictions. Next, I mention some very popular offshore practises, which arise due to existence financial secrecy:

2.2.1 Loss of Tax Revenues

The losses of tax revenues are perceived as one of the biggest inefficiencies of international financial secrecy, since hiding the wealth by corporations and individuals deprive the jurisdiction of its lawful income. As Gravelle (2010) mentions in his article, the government experiences tax revenue loss from both individual and corporate income because of profit and income shifting into countries with low taxes.

Many economics took as an aim to express how much the well-behaving jurisdiction loses because of the tax havens' secrecy, but the estimations differ possibly also because of the lack of definitional consistency. Gravelle (2010) mentions that the annual cost of offshore tax abuses might be approximately $100 billion per year. Whereas Zucman (2014) estimates the value of tax revenue loss to $190 bilion. And for instance Henry (2012) estimated that in 2010 $21 to $32 trillions were placed offshore. Generally, it is also known that "tax losses to poorer countries exceed the amount they receive in aid annu-

ally" (Murphy, Christensen & TJN 2012). In economic literature the majority of studies calculates the tax revenue in general for all tax havens such as Cobham & Janský (2018), whereas some economists such as Tørsløv, Wier & Zucman (2018) accomplished to ascribe the losses to certain tax havens. Clausing (2016) focuses on the United States and estimates that due to profit shifting the U.S. government losses between $77 billion and $111 billion of its corporate tax revenue by 2012, and also suggests its substantial increase in recent years. Cobham & Janský (2019) in their article also concentrates on the United States and claims that around 25% of the global profits of US multinationals, more precisely $660 billion in 2012, might be shifted offshore. Palanský & Janský (2019) conclude that profit shifting intensifies the existing income inequalities as well as the dissimilarities in tax revenues between various jurisdictions.

The fact that tax haves are indirectly taking the wealth from the non-secretive jurisdictions with international standard tax systems, since the financial conditions in secrecy jurisdiction are beneficial for the tax evaders, is one of their main issues of tax havens. These jurisdictions with secretive and shadowy tax environment can therefore benefit thanks to secrecy extensively, since due to its popularity with investors and corporations it can create often significant part of the government's income. Zucman (2016) evaluated the importance of tax havens by estimating that globally 8% of the world's financial wealth at minimum is deposited in secrecy jurisdictions. He also mentions that in various parts of the world this number can vary, in Africa approximately 30% of financial wealth is held offshore and in some parts of Asia more that 50%. For example, the foreign wealth in Switzerland reached 2,3 trillion of USD, out of which 1,3 trillion are deposited there by Europeans. This large sum of money deposited only in Switzerland corresponds to 6% of financial holding of all EU households (Zucman 2016). Recently economists such as Caruana-Galizia & Caruana-Galizia (2016) also estimated the size of offshore wealth thanks to data available due to recent offshore leaks.

2.2.2 Illicit financial flows

Financial Secrecy also facilitates illicit financial flows, which are another deeply criticized disadvantage of secrecy jurisdictions. They can be defined as the „money that is illegally earned, transferred or utilised, breaking laws at any point during their transmission earns such funds this label“ (Murphy, Christensen

& TJN 2012). There are three forms of them: (i) "the proceeds of bribery and theft", (ii) "criminal activities including drug trading, human trafficking, illegal arms, contraband" etc. (iii) and "commercial trade mis-pricing and tax evasion", creating 2/3 of the total (Murphy, Christensen & TJN 2012).

Illicit financial flows are most likely to occur in a country where the environment is very secretive and insufficiently supervised. Since as Murphy (2008) claims in his paper, the illicit financial flows may be the proceeds of crime, corruption, crime, harmfull capital and profits seeking as well as payments related to bribery and corruption. Murphy in his paper also shows that the harmful illicit financial flows causing the concern with the secrecy world, tent to flow through the secrecy space that tax havens create. And also he explains that any attempt to measure or regulate them will always be difficult, exactly because of their nature of floating over and around places accustomed to facilitating their existence. Baker (2007) in estimated the annual illicit financial flows with abroad to be about $1 trillion to $1,6 trillion.

In the economic literature exists various studies concerning illicit financial flows. Hong & Pak (2016) contributes to the literature about an important channel of the illicit financial flows (trade misinvoicing) by proving that the often used partner-country trade data comparison method used for their estimation is incorrect, and also by introducing a new alternative method of trade misinvoicing estimation not relying on the trade statistics of partner countries. Kar & Cartwright-Smith (2009) in their study estimate the volume and pattern of illicit financial flows, they also conclude that generally they are annually growing in volume as well as that Asia and Europe have the largest recorded outflow while the Middle East and North Africa the fastest yearly growth. Schwarz (2011) for example contributes to the literature about money laundering by showing that low regulatory standards of tax havens are the way how to attract black money activities. Whereas Cobham (2014) is using the results of FSI 2013 to identify country-specific vulnerabilities, as well as using the foreign direct investment and commodity trade data other bilateral ones. In my thesis, I use an approach from Janský, Meinzer & Palanský (2018), which is similar to the one in some ways to the one by Cobham (2014), but concentrates on a certain type of bilateral economic data and on analysis in a global scale.

Tax evasion vs Tax avoidance

Tax avoidance is usually practised by wealthy individuals and large multinational corporations, and it can be defined as a way how to minimize taxes usually legal (Gravelle 2010). On the contrary, tax evasion can be explained as a reduction of taxes, but the illegal ones. More precisely it can be defined as "the illegal non-payment or under-payment of taxes, usually by making a false declaration or no declaration to tax authorities; it entails criminal or civil legal penalties" (Murphy, Christensen & TJN 2012). The distinction between these two terms is sometimes demanding, since corporations tend to refer to some tax evasion's activities as tax avoidance's activities, which is often the cause of their disputes with Tax offices of the countries where the corporation is based in (Gravelle 2010). One of the examples of these practices is transfer pricing, which is "a recognized accounting term for sales and purchases that occur within the same company or group of companies" (O'Neill & Orr 2018). The prices within the company or group of companies should respect the Arms-length principle.

More than $3 trillion annually might be according to Murphy, Christensen & TJN (2012) lost to tax evasion throughout the world, more than 25% of these losses are from the European Union. Guttentag & Avi-Yonah (2005) estimated the amounts of individual tax evasion to be about $50 billion per year. United States on contrary to Europe have bigger issues with corporate tax evasion than with offshore personal wealth, since to even up the losses because of tax havens US would need to higher the taxes by 20% (Zucman 2016).

2.2.3 Social injustice and inequality

Tax havens have impact on significant aspects of our living, since they influences not only the economy but also the society. Nowadays our democratic society is based on social contract, therefore whole society pays taxes to finance the public goods and services. That is why tax havens can create negative interference to our society, since the wealthier the individual or the firm is, the bigger effort it produces in order to avoid taxation. Therefore, some of the members of our society does not pay almost any taxes, which creates the inequality. So, the middle-class and also possibly low-class taxpayers are likely to believe that they pay higher effective tax rates than the wealthiest ones, as well as the middle or small companies are likely to believe that they contribute more to society then

the largest corporations. And since our society is based on social contract, this injustice can cause that some people might feel mistreated by the government or by the global system. Therefore, our society as we know it today could fall apart (Zucman 2016). So, solving the financial secrecy issue and being able to fight against that tax avoidance is essential in order to keep the society together.

Murphy, Christensen & TJN (2012) in a report for Tax Justice Network confirms the inequality by arguing that the costs caused by unfair tax practices fall most heavily on poor people. They also mention that internationally less than 10 million richest people accumulated a $21 trillion offshore fortune, from which less than 100,000 people worldwide own $9.8 trillion of wealth held offshore. They estimated that it would have generated income tax revenues about $190, assuming modest rate of return of just 3% and 30% income tax, which is approximately twice the amount OECD members expended internationally on all overseas development assistance. Also, they argue that more than $12.1 trillion were processed by the top 50 private banks in cross-border invested assets for private clients at the end of 2010.

2.3 Policies

Because of all the negative impacts of tax havens on the various economies and societies, several steps against the tax havens were undertaken. Also, several non-political organizations emerged fighting against tax havens such as Tax Justice Network (TJN) and Global Financial Integrity, both of which I am also using as a source of information and source of several analysis. The purpose behind these organizations is providing the research and other empirical fact as a proof to the fight against tax havens, as well as to raise public awareness of the various issues about tax havens. Also these organisations primarily put under pressure both national and international authorities. And exactly these national authorities such as OECD, The European Union (EU), G20, Financial Action Task Force or Financial Stability Forum, creates the anti-offshore policies which aims to put pressure on tax havens in order to comply with international standards of taxation. All of these organizations intend to make harmful tax systems of secrecy jurisdictions undergo some reforms in order to become non-harmful international standard tax systems.

2.3.1 Identification of tax havens

Identifying of tax havens is a complex issue, since as mentioned earlier the extensive economic literature is lacking a general consensus about which jurisdiction should be defined as a tax haven and which not. No precise methodology for identifying tax havens is available for distinction about tax havens and non-havens. There are several reasons for that. One of them is that the tax havens, more precisely the financial secrecy in general, often changes due to various conditions of environments throughout the world. Other reason is that since the countries dislikes being listed on the tax haven's list, they protest against it, so there could be some political pressure on the listing authorities (Gravelle 2010).

List of tax havens can be created by each economist differently. But some of them they develop their lists of tax havens according to how many times the particular jurisdiction was mentioned in a various influential lists of tax havens. This is called "concensual approach" used for instance by Palan, Murphy & Chavagneux (2010). Whereas Garcia-Bernardo, Fichtner, Heemskerk & Takes (2017) are using for instance data-driven approach based on the global corporate ownership network containing 71 million ownership relations among 98 million firms. Generally, the tax havens are not competitive they tend to specialise on various types of wealth management (Zucman 2016). The various types of tax havens with its diverse issues describe Kudrle & Eden (2003) in their paper.

One of the most valuable list of tax havens nowadays is the EU list of non-cooperative tax jurisdictions since as Pierre Moscovici, the Commissioner for Economic and Financial Affairs, Taxation and Customs, mentioned in EU press report, the EU list is not only a great success for EU countries but for a whole world since "thanks to the listing process, dozens of countries have abolished harmful tax regimes and have come into line with international standards on transparency and fair taxation" (EC 2019). The European Commission (EC) issues regularly a list of non-cooperative tax jurisdictions, which is "a common tool for Member States to tackle external risks of tax abuse and unfair tax competition" (European Commission 2019). Additionally, the EC updates the lists constantly, since the information about the economy, politic and legal background is evolving rapidly. The EU lists of tax havens were chosen by EC with approval of member states as a better and more valuable alternat-

ive of a combination of national lists, which could have a "dissuasive effect on problematic third countries". In 2016 the European Council, more precisely the Code of conduct group, which is an authority who is responsible for monitoring the countries, started to screen 92 selected jurisdictions. For screening internationally recognised good governance criteria are used. The criteria for the EU listing process could be divided into the 3 major areas: Transparency, Fair Tax Competition and BEPS implementation, under which are various policy measures such as common reporting standard (CRS) which I will mention later (European Commission 2019). From these criteria two major list of non-cooperative tax jurisdictions were created, the blacklist and greylist. Blacklist compose of countries which failed to make obligations in order to comply with the agreed good governance standards. Greylist is composed of countries which promised to meet their obligations by the end of a year in order to not be on the blacklist next year.

The European Union thanks to its EU list of non-cooperative tax jurisdictions strengthen its position as one of the best tax good governance providers. Its transparent (since from 2017 all the countries' commitment letters are published online) and trustworthy process of creating tax havens is beneficial for the whole society, since it makes various countries to change their national tax legislation in order to comply with international standards. Thanks to this EU listing process various jurisdiction individually implemented specific measures in order to eliminate and fix the detrimental parts of their tax legislation. More precisely over the last year around 60 counties tried to fix their tax system according to the EC concerns and more ten 100 harmful systems were eliminated (European Commission 2019). Another large contribution of EU listing process is making countries to join the international Organisation's for Economic Co-operation and Development (OECD's) frameworks as for example BEPS Inclusive Framework or OECD's Global Forum on Transparency and Exchange of Information for Tax Purposes (Made 2017).

Contrarily, there have been some deficiencies mentioned about the EU list of non-cooperative tax jurisdictions, such as that according to Haines (2017) EU played it safe by not accounting for the well-known tax havens. Primarily under the strong criticism was the fact that United States were not included to the EU tax havens blacklist, nor even to the greylist, even though it did not fulfilled the criteria such as applying the BEPS minimum standard,

more precisely the automatic exchange of information (AIE) and others, for which other countries were listed by the Code of conduct group. Which Sven Giegold, the Greens/EFA Group spokesman for economic and financial affairs in the European Parliament, confirmed by mentioning that some important tax havens were not put on the list such as for example United States and therefore claims that the EU list is politically biased (Haines 2017). Similar opinion also has Alex Cobham, chief executive of the Tax Justice Network, who claims: "The result of the flawed blacklisting process is a politically led list that includes only the economically weak and politically unconnected" (Tax Justice Network 2017). Another critics claim that both blacklist and greylist should be sanctioned, but EU claims that these lists are created as a measure how to the make the secrecy jurisdiction deal with their harmful tax systems by their own. Overall even the biggest critics of the EU list of non-cooperative tax jurisdictions agreed on that it is at least a good start as it started numerous debates on the deficiencies of the various tax systems, and also were an incentive for tax policy reviews in more than 40 third-countries (Haines 2017).

2.3.2 International exchange of information

Not for all tax laws it is better to be harmonized into an international law, since the international law may cause other states to interfere in domestic affairs. But overall countries need to cooperate in order to obtain asset information for their taxpayers, to properly gather all tax revenues (Ishii 2017). Therefore, they need to somehow bilaterally exchange the information. For proper taxation of tax entities in the early 20th century, countries started to conclude double tax agreements, according to which each country is obliged to provide basis tax information if it does not conflict with their domestic laws. The reason for these agreements is to prevent the double taxation defined as „the imposition of comparable taxes in two (or more) States on the same taxpayer in respect of the same subject matter and for identical periods" (OECD 2015), since it effects negatively the global exchange of goods, services and also movements of capital, technology and persons abroad (OECD 2015).

In the late 1990s, OECD started dealing with the harmful tax practises of tax havens, part of which was the creation of the Global Forum on Transparency and Exchange of Information for Tax Purposes (the Global Forum) in 2000, which is an OECD's self-standing body with purpose of acceleration

of information exchange between OECD countries and tax havens in order to promote transparency. Therefore, on the initiative of OECD some countries started arranging Tax Information Exchange Agreements (TIEAs) to increase the country's tax revenue by ameliorating the transparency of bank accounts (Ishii 2017). Although OECD tried to encourage tax havens to conduct the bilateral tax treaties about exchanging information with other countries, until 2008 the majority of tax havens declined signing them, the financial crisis changed that. Since various reason for the outbreak of the financial crises were sought, the tax havens were perceived as one of the possible causes. Therefore, right after the crises the policy measures against tax havens become very important for governments and as well as for the whole world. So, the top priority for the London Summit of G20 in April 2009 was impelling tax havens to sign the bilateral agreements on exchange of information. If a particular country did not sign at least 12 treaties, the G20 would impose sanctions against them. This so-called "G20 crackdown" increased significantly the number of treaties signed, by the end of the 2009 altogether more than 300 of them were signed (Johannesen & Zucman 2014). According to OECD (2011), the G20 crackdown ameliorated tax collection and increased the probability of detecting tax evasion. World leaders even pronounced after establishing the G20 crackdown that: "the era of bank secrecy is over" (G20 2019).

However, not all economists share the enthusiasm about the results of G20 crackdown. An important paper by Johannesen & Zucman (2014) evaluates the G20 Tax Haven Crackdown and concludes that the majority of tax evaders did not reacted to the treaties at all, and the minority reacted by relocating their deposits to secrecy jurisdiction without treaty. Also for example, Shaxson & Christensen (2011) concluded major deficiencies as for example the necessity of specifying the "tax cheat" or the insufficiency of just 12 bilateral agreements on exchange of information, since the tax haven can choose with which jurisdictions, they want to sign the treaty with, the result of signing the may not have any significant effect. And Elsayyad & Konrad (2012) had empirically proven that signing the multiple bilateral treaties and their "sequential nature of the process is harmful and more costly than a "big bang" multilateral agreement." Few months after the summit, The Foreign Account Tax Compliance Act (FATCA) by the United States Congress accompanied the G20 crackdown and contributed to a global automatic exchange standard, by requesting information about US citizens from foreign banks (OECD 2018a).

The Convention on Mutual Administrative Assistance in Tax Matters (the "Convention"), established in 1988 by OECD and the Council of Europe, was amended in 2010 as a response of the G20 2009 summit to became “the most comprehensive multilateral instrument available for all forms of tax co-operation to tackle tax evasion and avoidance, a top priority for all countries” (OECD 2019a). The Convention, by virtue of its Article 6, requires the countries to mutually agree on the scope and the procedure of the automatic exchange of information (AIE). Therefore, two Multilateral Competent Authority Agreement (MCAA) were established, the MCAA on the Exchange of CbC Reports (the "CbC MCAA") for the automatic exchange of Country-by-Country Reports, and MCAA on Automatic Exchange of Financial Account Information (the "CRS MCAA"), for the automatic exchange of financial account information pursuant to the Common Reporting Standard (OECD 2019a).

One of the Global Forum aims is also to assure the efficient mechanisms for exchange of information upon request (EOIR) in each domestic jurisdiction. EOIR is the exchange of financial or accounting information on a concrete case at the request of one tax administration by another tax administration (Barreix, Roca & Velayos 2016). Even though the AIE is now staring in the exchange of information field, EOIR stays the important universal standard and is widely used by the Global Forum for pear reviews. In 2013 G20 aimed to establish a global AIE standard by requesting establishing The Common Reporting Standard (CRS) from OECD, which requires on jurisdictions annually to automatically exchange that information gained from the jurisdiction's financial institutions with other jurisdictions. The CRS was fully approved by G20 in September 2014. Next significant step towards international legal framework was signing the previously mentioned CRS MCAA in October 2014 (OECD 2018a).

The automatic exchange of information (AIE) enables tax authorities obtaining information on financial accounts belonging to taxpayers from other tax authorities without the need of requesting it exclusively, as opposed to EOIR. This fact creates easily the greatest advantage of this exchange, resulting in significant increase of tax transparency (Ishii 2017). Nevertheless, the importance of current standard EOIR will not diminished, both standards work together and complement each other. The new global standard on AIE also

decreases the possibility of tax evasion and also enables to detect the formerly unobserved tax evasion as well as to recover the loss of tax revenue because of non-compliant taxpayers. Therefore it reinforces the global efforts for the augmentation of transparency and cooperation (OECD 2018b). For my thesis I used the data from official OECD website called Automatic Exchange Portal, which I describe in the Data Section.

Several studies have been recently done in the past about the automatic exchange of information, since it is as described above rapidly developing topic. For example, Menkhoff & Miethe (2017) used newly released bilateral locational banking statistics of the Bank for International Settlements to examine the effect of AIE treaties on banking deposits in tax havens, they found that the effect is negative, as well as Johannesen & Zucman (2014) did in their study. Hakelberg & Schaub (2017) show that the even though United States did not participate in AIE, it imposed AIE on other countries, which resulted in strongly redistributive regime deteriorating the economic situation of secrecy jurisdictions.

With the results from my thesis I am contributing to the literature connected to two major policies, my efforts can be generally expressed as evaluation of lists of tax havens and evaluation of an exchange of information. Since lists of tax havens are influencing the public and also academic knowledge of which country is perceived as a tax haven and which is not, they can also significantly help policy makers while making their governmental or international policies. Additionally, the importance of the exchange of information is expressed by Schjelderup (2015) since he identifies information exchange treaties as "the most severe step taken against tax havens". I am contributing also partly to the literature regarding the corporate tax rates. Significant number of economics have in the past analysed some issues connected to corporate tax rate. For instance, O'Neill & Orr (2018) claims in their paper that economic activity tends to be announced to be present in low-tax places rather than truthfully recorded where it is actually present. Or Ishii (2017) argues that secrecy jurisdiction attracted foreign assets from developed countries also by reducing the tax rates or transaction costs.

Chapter 3

Methodology

In this part of my thesis I would like to explain the methodology I used on the various sources of data, which I describe in subsequent part of my thesis called Data. My thesis could be divided into two major empirical sections. In the first section I intend to update and expand the research of Janský, Meinzer & Palanský (2018) using the newly published data set of CPIS, to recreate their Bilateral Financial Secrecy Index (BFSI) with updated, longer time-framed data for every relationship of two jurisdictions possible. On which basis I then intend to create a Bilateral Financial Secrecy Index Received and a Bilateral Financial Secrecy Index Supplied, and most importantly a Net Bilateral Financial Secrecy Index, which will represent the the difference between the general secrecy supplied and received for every jurisdiction possible, so will estimate whether the jurisdiction wins or loses due to financial secrecy. In the second section I intend to primarily work with the newly created Net Bilateral Financial Secrecy Index, and partly with the BFSI Supplied and BFSI Received to come to new findings as presented in the Results section. Generally, in this section I describe the methodology using which I intend to evaluate several policy measures such as for instance the lists of tax havens or the Automatic Exchange of Information.

Firstly, I need to elucidate and precisely describe the fundamental indexes and then more importantly their well-established methodology, on which basis I create the Updated BFSI, BFSI Supplied, BFSI Received, Net BFSI, which I will later use in order to obtain further conclusions about all available jurisdictions in the data set, and which I primarily also use for evaluating the policy efforts. The fundamental indexes on which I will build on are the Financial

Secrecy Index (FSI) created by Cobham, Janský & Meinzer (2015) and more importantly the Bilateral Financial Secrecy Index (BFSI) developed by Janský, Meinzer & Palanský (2018). Both FSI and BFSI are composed of two parts, the quantitative component and the qualitative component. As mentioned in the Literature Review section, both of the components are equally needed in order to develop the indexes.

3.1 Financial Secrecy Index

The Financial Secrecy Index (FSI) is primarily a useful, increasingly respected and well-known measure of financial secrecy, calculated for each jurisdiction according to its contribution to the global problem of financial secrecy (Tax Justice Network 2018). The FSI is composed of two parts, which are called secrecy scores (SS) and global scale weights (GSW). Secrecy scores are the qualitative part of the index, which measure for each country its level of financial secrecy. Global scale weights are the quantitative part of the index and can be defined as "the share of the value of each jurisdiction's financial services provided to foreign residents on the value of the global total of cross-border financial services" (Cobham, Janský & Meinzer 2015) and are calculated as :

$$GSW_i = \frac{exports\ of\ financial\ services\ (true\ or\ extrapolated)_i}{sum\ of\ all\ world\ exports\ of\ financial\ services\ (true\ or\ approximated)}$$

The methodology of GSW is based on the article of Zoromé (2007), and its idea of the intensity connected to the measure of financial services exports and GDP. Additionally, the global scale weights are crucial, since the knowledge of which jurisdictions effect the global world of financial secrecy is more important than the knowledge of only which jurisdiction are highly secretive without having almost any global impact. Even though it could be said that it places larger jurisdiction at a disadvantage, these major jurisdictions have larger financial sector size and provide more chances for hidden illicit financial flows, compared to smaller jurisdiction with the same secrecy score. For that reason as mentions Tax Justice Network (2018): "the larger a jurisdiction's international financial sector becomes, the greater its responsibility to ensure appropriate regulation and transparency".

In order to calculate the Financial Secrecy Index, the following formula for combining the both SS and GSW is used:

$$FSI_i = secrecy\ score_i^3 * \sqrt[3]{bilateral\ scale\ weight_i}$$

I explain the idea behind this formula in more detail later in this section, since I used this formula also for my calculations in order to develop the updated BFSI. The same holds for the more detailed methodology of SSs. But to give the general idea, the secrecy score is cubed and global scale weights are cube rooted, in order to focus more attention on the significance of harmful secrecy regulations with respect to global financial secrecy (Tax Justice Network 2018).

3.2 Bilateral Financial Secrecy Index

To maintain consistency Janský, Meinzer & Palanský (2018) acted in accordance with the FSI's methodology as closely as possible while creating the Bilateral Financial Secrecy Index. Therefore, the Bilateral Financial Secrecy Index is also composed of qualitative part and quantitative part. The qualitative part, the so-called secrecy scores, is identical to the FSI methodology, with the exception of 18.-20. KFSI, as described later. Whereas the quantitative part is altered, instead of the global scale weights (GSW), bilateral scale weights (BSW) are used. Since as I mention in the Data section, no bilateral data on exports of financial services does exist, the methodology on creating GSW cannot be retained. Consequently, BSW are based on the bilateral International Monetary Fund's 2015 data on total cross-border portfolio investment as an approximation for financial services exports.

This significant deviation from the standard FSI methodology, is resulting in the ability to obtain the BFSI for every bilateral relationship of whichever two countries for which the IMF data are available. Since BSW can be defined "the share of each country's total portfolio investment with a jurisdiction as a ratio to the total global cross-border portfolio investment" (Janský, Meinzer & Palanský 2018). Therefore, the main benefit of BFSI is the possibility to express major tax havens respectively for each country, since the secrecy jurisdictions of different countries can vary significantly. So BFSI solves one of the major disadvantages of FSI, which is not including the fact that the importance tax havens varies throughout the jurisdictions.

3.3 Updated Bilateral Financial Secrecy Index

Since both the FSI (Cobham, Janský & Meinzer 2015) and the BFSI (Janský, Meinzer & Palanský 2018) are very useful concepts regarding the financial secrecy, which are more and more being renowned, because they both serve very well for policies concerning tax havens as well as for academic purposes, I will maintain this methodology. In order to obtain the Net Bilateral Financial Secrecy Index, I need to firstly recreate the Bilateral Financial Secrecy Index using methodology from Janský, Meinzer & Palanský (2018) with the difference of using more up-to-date and longer time-framed data.

3.3.1 Secrecy score methodology

Firstly, to obtain the more updated BFSI, I need to download the data set from the Tax Justice Network website, which contains the 2018's results of Financial Secrecy Index and where also the 2018's version of secrecy score newly for 112 states are published. Since the so-called secrecy scores are the qualitative part of all three mentioned indexes, it's important to mention how they are created. The fact of jurisdiction being secretive is not straightforwardly apparent, they are rather multiple ways to recognize, not if the jurisdiction is secretive, but how much. Theoretically, jurisdiction can range from being perfectly transparent to highly secretive.

Secrecy scores are based on 20 verifiable indicators, called *Key Financial Secrecy Indicators (KFSI)*, "which allow an assessment of the degree to which the legal and regulatory systems (or their absence) of a country contribute to the secrecy that enables illicit financial flows" (Tax Justice Network 2018). The 20 Key Financial Secrecy Indicators can be assembled to four dimensions of secrecy which are called: "Ownership Registration" (5 KFSIs), "Legal Entity Transparency" (5 KFSIs), "Integrity of tax and financial regulation" (6 KFSIs), and "International Standards and Cooperation" (4 KFSIs) (Tax Justice Network 2018). As mentioned earlier, Janský, Meinzer & Palanský (2018) while creating the BFSI adjusted the secrecy scores, since the SS from FSI are solely unilateral. More precisely, the adjustments are needed to be made in the 18.KFSI (automatic exchange of information), 19.KFSI (on bilateral treaties) and 20.KFSI (international legal cooperation), since they are representing bilateral relationships. Janský, Meinzer & Palanský (2018) adjusted these three

KFSI for only intra-EU relationships and for the 18.KFSI and the 19.KFSI they made adjustments not only for relationships between EU countries, but also for Andorra, Liechtenstein, Monaco, San Marino and Switzerland, because of EU-related agreements. Therefore, I adjust the downloaded data set described earlier where not only the results of 2018's FSI and its two components are available, but also the values for each country of all the 20 KFSIs, so I could adjust the 18., 19. 20. KFSI for the intra-EU relationships as mentioned above.

The final secrecy score is assembled as the average secrecy score of all 20 Key Financial Secrecy Indicators, where each one of them is ranging from 0% (full transparency) to 100% (full secrecy). Therefore, the final secrecy score could also range from 0% to 100%, but it reality in 2018, it ranged from 41,83% (Slovenia) to 88,58% (Vanuatu). According to only this final secrecy score the 5 least secretive states are all European countries, namely Slovenia, United Kingdom, Belgium, Sweden and Lithuania, whereas the 5 most secretive states are all non-European countries, namely Vanuatu, Antigua and Barbuda and Bahamas, Paraguay, Brunei.

The FSI with its secrecy score has been developing from 2009, with 4 precedent editions existing before the contemporary fifth edition. Throughout its history it became renowned, respected and widely use measure of secrecy. Nevertheless, it is still being ameliorated. From the 2009's version it has been improved enormously, the number of jurisdictions covered increased from 60 in 2009 to 112 jurisdictions in 2018, and also the methodology has been improved. Moreover, even from the 2015's version it has been improved significantly, since in the 2015's version the secrecy scores are calculated only with diverse 15 KFSIs. The insufficiency and inaccuracy of the 15 KFSIs has been studied by various researchers such as Galuszka (2016). Also various debates such as whether the equal weights are the best fit has taken place (Smallwood 2011).

I should also mention that neither Tax Justice Network (2018), nor Janský, Meinzer & Palanský (2018), and nor do I while recreating their index and creating other ones using the their index, do claim that the measure for financial secrecy constant, fixed or objectively best. But among what is available now, as declared by policy debate and public, the secrecy scores originated from FSI are best accessible indicator of financial secrecy (Clark, Lai & Wójcik 2015).

3.3.2 Bilateral scale weights methodology

Similarly, while recreating the updated version BFSI as well as creating the Net BFSI, I have thought of using another data for recreating BSW. Since IMF's data on portfolio investment have some deficiencies, such as they may result in inaccurate results, because of a possibility that they may not reflect precisely the entire range of activities connected to financial secrecy. However as Janský, Meinzer & Palanský (2018) also mention in their paper "that the lack of alternative data sources at the bilateral level and with a wide coverage of countries prevents us from improving on these results."

Therefore, to obtain the updated BFSI, while being aware of imperfections of the data, I recreate the newer version of BSW based on the downloaded data from the International Monetary Fund website called The Coordinated Portfolio Investment Survey (CPIS), where economy's data on its holdings of portfolio investment securities are presented. Keeping in mind the enormous size of the data I only used the subset of this data, created by deep cleaning the data, then by filtering it several ways in order to obtain only the positive cross-border portfolio assets data (as mentioned in the Data part), denoted in U.S. dollars and for year 2017, with total holdings as both countries' sector. After gaining the clean subset of the data in R, I recreated the bilateral scale weights, for each jurisdiction i and each jurisdiction j, by using the formula:

$$BSW_{ij} = \frac{cross-border\ portfolio\ assets\ (true\ or\ approximated)_{ij}}{sum\ of\ all\ global\ cross-border\ portfolio\ assets\ (true\ or\ approximated)}$$

Where the sum of all global cross-border portfolio assets is sum of all the assets with positive value, which are available in the data set from IMF's Coordinated Portfolio Investment Survey for that particular year, not taking into consideration for which relationship we are able to obtain secrecy scores.

After obtaining both BSW and SS and merging the subset of the data sets of IMF's data on total cross-border portfolio investment with the one including the secrecy scores for each state, the BFSI for each country j and partner jurisdiction i can be computed as:

$$BFSI_{ij} = secrecy\ score_i^3 * \sqrt[3]{bilateral\ scale\ weight_{ij}}$$

And since the bilateral weights could be presented in percentages, I divided every computed bilateral financial secrecy index for all the bilateral relationship between two jurisdictions by 100 to obtain the numbers in the same form Janský, Meinzer & Palanský (2018) did.

For illustration I am presenting the table of intermediate results and results from the process of creating the updated 2017's BFSI version in R on the example of relationships between the Czech Republic and ten jurisdiction with the highest BFSI, since presenting all the work in R-code would not be pleasing nor beneficial.

Table 3.1: Creating the updated 2017's BFSI

Juris-diction	Counter-part country	Year	CPIS assets in $	BSW	SS	SS^3	$BSW^{1/3}$	BFSI	BFSI/100
CR	Netherlands	2017	2558311023,44	0,005%	66,03	287888,22	3,62%	10413,47	104,13
CR	Luxembourg	2017	6818702738,25	0,013%	58,20	197137,37	5,02%	9886,82	98,87
CR	United States	2017	3368183739,61	0,006%	59,83	214169,20	3,96%	8490,68	84,91
CR	Austria	2017	4497534169,37	0,008%	55,90	174676,88	4,37%	7625,71	76,26
CR	Poland	2017	2304588793,39	0,004%	57,35	188625,44	3,49%	6589,49	65,89
CR	Slovak Republic	2017	3241275656,38	0,006%	54,90	165469,15	3,91%	6476,53	64,77
CR	Switzerland	2017	135127518,67	0,000%	76,45	446819,86	1,36%	6064,11	60,64
CR	Turkey	2017	387581607,25	0,001%	67,98	314154,64	1,93%	6057,85	60,58
CR	Romania	2017	488046592,46	0,001%	65,53	281397,67	2,08%	5859,51	58,60
CR	Germany	2017	1120990089,71	0,002%	59,10	206425,07	2,75%	5671,31	56,71

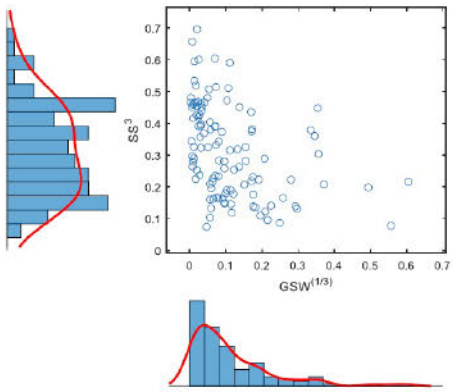
Source: Author

I could not just straightforwardly multiply SS with BSW, since as explained by Cobham, Janský & Meinzer (2015) for the case of FSI, the scale weight component obtains substantially more variation than the SS. Therefore, this problem could solved by somehow transforming both the secrecy score and the global scale weights or the bilateral scale weights before multiplying them. The easiest way possible is to take the cube of SS and the cube root of GSW/BSW instead, since it according to Tax Justice Network (2018): "largely removes the

skew in the distribution of the GSW, and results in similar percentile ratios between the GSW and SS, as opposed to the untransformed variables which are substantially different.“ Although there exist several discussions whether better way of combining the two parts does not exist (Becker et al. 2016).

The end result of the transformation of taking the cube of SS and the cube root of GSW is shown in the following figure, from which could be seen a “roughly normal distribution (although still slightly skewed to the left) for the SS and still quite skewed distribution for the GSW” (Tax Justice Network 2018):

Figure 3.1: Scatter plot and marginal distributions of SS^3 and $GSW^{1/3}$

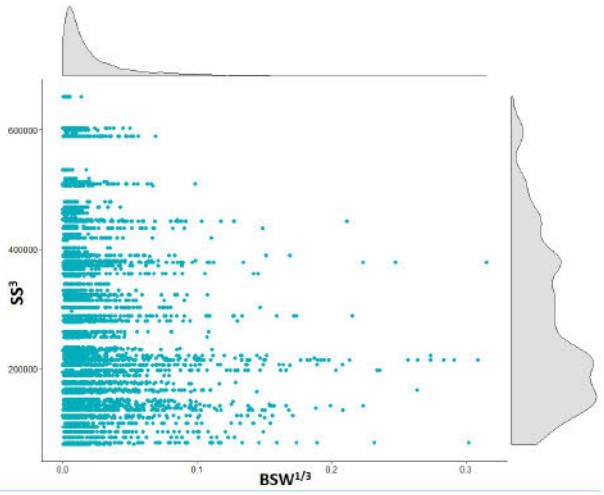


Source: Tax Justice Network (2018)

To see the effect of the transformation also for the Updated Bilateral Financial Secrecy Index, I have made the similar scatter plot and marginal distributions, as created by the Tax Justice Network (2018) for the FSI, with the difference of using another data. I used my clean subset of the CPIS data, which I primary utilized for recreating the BFSI as well as creating the Net BFSI. The purpose, why I have created the figure was to see if there is any significant difference between the FSI and BFSI data and also to compare the transformations, which Cobham, Janský & Meinzer (2015) used in the final formula for composing the SS and GSW in order to create FSI, and which I used as well in the final formula for combining the SS and BSW in order to recreate BFSI.

As can be seen by comparing the Figure 3.1 to my Figure 3.2, the results of transformations of variables by taking their cubed or cube root value are similar for both cases, since for both it reduced the unpleasant significant variation between the qualitative and the quantitative component:

Figure 3.2: Scatter plot and marginal distributions of SS^3 and $BSW^{1/3}$



Source: Author

3.3.3 Net Bilateral Financial Secrecy Index

Concisely described methodology

To accomplish creating the Net Bilateral Financial Secrecy Index, I needed firstly to compute the Bilateral Financial Secrecy Index received by the one particular jurisdiction from the rest of the world and the Bilateral Financial Secrecy Index supplied by the one particular jurisdiction to the rest of the world. Both can be computed from the previously achieved subset of data containing the Updated Bilateral Financial Secrecy Index for every relationship between two jurisdictions, by the following methodology.

To obtain BFSI Received for the selected country, I take all the BFSIs between the particular country and all the counter-party counties, with which the selected country has the relationships with, and from which it receives the secrecy, sum them and denote this number for the particular country as the BFSI Received. As can be seen from the following formula, since each jurisdiction i can receive the secrecy from maximally n counter-party jurisdictions,

where the number of them can vary for each jurisdiction from 0 to 111, since altogether 111 countries in 2017 supplied secrecy according to the available data.

$$BFSI\ Received_i = \sum_{j=1}^{n} BFSI_{ij}, \qquad n \in (0, 111)$$

Conversely, to obtain the BFSI Supplied for the selected country, I take all the BFSIs which are between all possible various countries and the particular selected country, which I select for this case as the counter-party (since our selected country supplies the secrecy to all of the previously mentioned various states) and sum all of the BFSIs, then denote this number for the particular country as the BFSI Supplied. As can be also seen from the following formula, since each counter-party jurisdiction j can supply the secrecy to maximally m jurisdictions, where the number of them can vary for each jurisdiction from 0 to 82, since altogether 82 countries in 2017 received secrecy according to the data available.

$$BFSI\ Supplied_j = \sum_{i=1}^{m} BFSI_{ji}, \qquad m \in (0, 82)$$

And subsequently by comparing the BFSI Supplied and the BFSI Received, more precisely by subtracting the BFSI Received from the BFSI Supplied, I compute the Net Bilateral Financial Secrecy Index for that particular country l using following formula:

$$Net\ BFSI_l = BFSI\ Supplied_j - BFSI\ Received_i, \quad where\ i = j$$

Data availability is an important issue when creating the Net BFSI. While combining the quantitative and qualitative component using subsequently described methodology, it is intelligible that I cannot obtain the Net BFSI for more than 112 countries, because of the fact that the secrecy scores are available only for 112 countries. Since only 82 jurisdictions reported their cross-border portfolio assets deposited in other countries, for which I have the secrecy scores available for at least one of the counter-party jurisdictions for each country, I can calculate the BFSI Received by above mentioned methodology for 82 countries. In BFSI Received can also occur some countries for which the secrecy score is not available, since while calculating BFSI Received I am using the

SS of the country supplying the secrecy. So I can compute the BFSI Recieved for countries: Albania, Argentina, Bangladesh, Belaru, Colombia, Egypt, Honduras, Kazakhstan, Kosovo, Kuwait, Mongolia, Pakistan, Palau and West Bank and Gaza, for which the Tax Justice Network did not obtained the secrecy score. Although 240 countries, were reported as a countries, where the previous 82 countries has deposited their cross-border portfolio assets, because of the lack of secrecy score information for the remaining 129 countries, I have been able to calculate the BFSI Supplied only for 111 states. While combining these two values, the BFSI Received and the BFSI Supplied for each country, I was able to compute the Net Bilateral Financial Secrecy Index only for 68 countries, since only for 68 countries both BFSI Received and BFSI Supplied are available for 2017. I should also mention that I do claim that this index indicating if the jurisdiction wins or loses due to secrecy is perfect. Several deficiencies occurs while establishing the Net BFSI, such as that the IMF CPIS data used for assets does not intend to cover the multiple-step investment relationships, or that the data can be limited in a different way as well as that all financial secrecy can be generally perceived as harmful, but overall the Net BFSI is still likely to indicate truthfully for the majority of countries if they win or lose due to secrecy.

To analyze whether the Net BFSI varied throughout the years, I have followed the same methodology to obtain updated BFSI, BFSI Supplied, BFSI Received as well as the Net BFSI, but in the beginning process of calculating BFSI I filtered the IMF CPIS data respectively for years 2008 to 2016. For all years as a qualitative component of BFSI I have used the secrecy scores from TJN published in 2018, since as I previously mention, the previously published versions of the SS obtained some deficiencies and also were primarily available only for some countries. The number of countries for which I was able to calculate Net BFSI varied throughout the years, but overall I was able to calculate the Net BFSI for all years from 2008 to 2016 for 61 countries.

3.3.4 Detailed analysis of the methodology

In this section I would like to present a detailed analysis of the methodology of Net Bilateral Financial Secrecy Index. Even though I have already briefly described the creation of Net BFSI, I want to focus next on the process of

creating it and on all ideas behind the creation of BFSI Supplied, BFSI Received and Net BFSI, since they are crucial for deeper understanding of the issue. For that reason, I would like to clarify what variables and values are precisely used for creation of BFSI Received and BFSI Supplied, what is behind the processes of summing and grouping of various BFSIs.

While thinking of how BFSI Supplied and BFSI Received were created, what real values are behind summing the BFSI, the creation of quantitative component of BFSI (BSW) is rather apparent. For BFSI Received case, I am hypothetically summing all the cross-border portfolio assets, which investors from the particular country has deposited in other countries. Whereas for BFSI Supplied case, the cross-border portfolio assets, which the investors from the other countries has deposited in the particular country, are being summed. And then dividing the both sums by the sum of all global cross-border portfolio assets, is a way how hypothetically could the overall BSW of the particular state for BFSI Supplied or for BFSI Received be obtained.

Meanwhile the idea behind creation of the qualitative component is more demanding, since for BFSI Supplied it has to be carefully considered which secrecy scores should be used. To compute the amount of secrecy which one country is supplying to the other countries, the usage the secrecy score of the supplying state is needed, since all these other counties receives the secrecy from this one state, the only difference is the quantity of the secrecy. Therefore, theoretically if the methodology of BFSI was to straightforwardly multiply the SS and BSW, the approach of summing the all the cross-border portfolio assets in the one country, and calculating the overall BSW for that country and then multiplying it with the SS of that country, could be possible alternative for obtaining BFSI Supplied for each country. But different variance of the SS and BSW does not allow it, the cube root of BSW and cube of SS must be used. For that reason, this other alternative of calculating BFSI Supplied cannot be equal to the previous one, therefore the only possible methodology is the one described in the beginning of methodology. To obtain the qualitative component for the BFSI Received is more complicated, since the one jurisdiction is receiving the secrecy from all the other states, the amount of secrecy will differ not only because of BSW, or in other worlds how much the relationship of two countries is important globally, but it will primarily differ qualitatively, because of the heterogeneity of the secrecy scores of various countries. So, in this case it would not have been possible to hypothetically just multiply the overall BSW

of the country just by the one secrecy score even without transformation of SS and BSW. Whereas it is needed to calculate the BFSI for each relationship of two country with the other states and then sum it, as indeed explained in the beginning of the methodology section.

The results for both Bilateral Financial Index supplied, and Bilateral Financial Index received are presented in the Results section together with relevant and also above described variables, such as overall BSW of the country which can demonstrate the global importance of the country such as for example GSW.

3.4 Policies using the Net BFSI

In this part of my thesis I would like to use my results of the Net BFSI in order to see whether various jurisdiction or international institutions have the knowledge of which country wins or looses due to secrecy and whether any steps had been undertaken in order to diminish the benefits of primarily the countries who wins thanks to its secrecy, such as for example listing them in lists of tax havens. And if there is any possibility that countries low tax rate have the tendency of benefiting due to secrecy more, and also more importantly if the policies of various countries achieves targeting these winning jurisdictions with exchange of information treaties. Therefore as a next step after obtaining the Net BFSI, I wanted to compare my results with the verified lists of tax havens, the most recent frequently updated and relatively transparent one for the European Union and two other global lists of tax havens.

3.4.1 EU lists of non-cooperative tax jurisdictions and global lists of tax havens

In order to be able to work with the EU list of non-cooperative tax jurisdictions, I created a subset of my data with the Net BFSI results focusing on the EU, where I considered only the BFSI regarding the 28 EU member states. More precisely, into computation of Net BFSI I included only the BFSI of the relationship between EU member state and the rest of the countries, where EU countries act either as suppliers or as receivers. Meaning that either investors from EU are investing to other countries or that the investors from other countries are investing to EU member states. Therefore, I merged the created data

set containing the values of the EU lists of tax havens, where blacklist and grey list were in form of binary variable, with the newly created data set with the values of Net BFSI for EU member states. In the end I ended up using the two most recent EU lists of tax havens, since the second one was released very recently. Since it is a possible way to see the how successfully the European Commission determined the countries which have the most harmful tax systems, and possible harms the EU states the most by winning the most thanks to secrecy. Then to make a bigger picture about the global policies against tax havens I have chosen also the two respected and renowned global list of tax havens by Johannesen & Zucman (2014) and Hines (2010), and used the same methodology to evaluate the policy with a difference os using the original Net BFSI.

3.4.2 Corporate tax rate

Since one of the factors which could influence the decision of investors from various countries into receiving the secrecy from a particular state are corporate tax rates, I was curious if there is any correlation between the value of Net BFSI and the value of Corporate tax rates. That is why I have merged the data set with the values of Net BFSI with the data set containing the values of Corporate tax rates of various countries, as obtained from KPMG website, to do the analysis, from which the results are also in the Result section.

3.4.3 Automatic exchange of information

Subsequently since one of the main aims in my thesis is to contribute to anti-offshore policy by working with my newly created Net BFSI, my next aim is to compare the automatic exchange of information (AIE), obtained from the OECD web page from the Automatic Exchange Portal set as described in the Data section, with the Net BFSI.

In order to be able to create the data set obtaining both Net BFSI and AIE information, I need firstly to connect each bilateral AIE relationships to the relationship for which I have calculated the updated bilateral FSI. So before being able to use the Net BFSI I first of all need to work with my updated BFSI. This approach of calculating the share of BFSI covered by AIE is done by Janský, Meinzer & Palanský (2018) in their paper, although they used more

than year older AIE information as well as two years older BFSI information. However my aim will not only be to replicate their approach with the updated data, in order to make more up-to-date evidence for policymakers against the tax haven, but primarily to work with the Net BFSI together with the AIE, to provide new findings.

So that is why after downloading the data set with the Activated Exchange Relationships for Common Reporting Standard (CRS) information from OECD website, I need to merge it with the already created data set with the updated values for BFSI. But before merging the data to prevent possible endogeneity of SS, thus Net BFSI, (while evaluating the relationship between Net BFSI and share of BFSI Received/Supplied covered by AIE), I need to change the SS, or more precisely to exclude the 18.KFSI (the automatic exchange information) from the SS and make the average only out the 19 KFSIs. After adjusting the SS, I need to compute the new adjusted 2017's BFSI in order to develop the adjusted Net BFSI.

Then I created a new data set combining both country and counter-party country, BFSI value and the AIE as a binary variable. Further I work with this data set in R and merge it with the new data set with adjusted Net BFSI values to obtain also another data set for each country with adjusted Net BFSI value, number of AIE treaties, number of BFSI relationships, share of relationships with suppliers/receivers cover by AIE and the share of BFSI Received/Supplied covered by the AIE treaties. The share of relationships with suppliers/receivers cover by AIE treaties can be computed as the number of AIE treaties signed with receivers/suppliers for the particular country divided by the number of countries for which values of BFSI Received/Supplied are available. The share of BFSI Received/Supplied covered by the AIE treaties for each jurisdiction i is computed just as the sum of all the BFSIs between the particular country i and all the countries m with which it automatically exchange the information divided by the BFSI Received/Supplied of the particular country i.

$$Share\ of\ BFSI\ Received\ /Supplied\ covered\ by\ AIE_i = \frac{\sum_{j=1}^{m} BFSI_{ij}}{BFSI\ Received_i/\ Supplied_i}$$

While combining the data sets several inefficiencies occurred, such as that even though the data from Automatic Exchange Portal combines not only the CRS Multilateral Competent Authority Agreements (MCAA), but also for example EU directives and other, still it lacks information about a lot of countries, which are not willing to automatically exchange information with any state. More precisely for my case of the 68 states for which I have calculated Net BFSI, there is no information in the Automatic Exchange Portal for Bolivia, Macedonia, Philippines, South Korea, Thailand, Turkey, Ukraine, United States, Venezuela. Another inefficiencies while merging data is that, the secrecy scores are available only for 112 countries, and the CPIS's data are also limited, therefore I have been able to calculate the Net BFSI just for 68 states, and since the AIE data are available for more that 90 jurisdictions, not all AIE data can beneficially used, as for example for state Argentina, St.Lucia and others.

Chapter 4

Data

In this part of my thesis I would like to comment on the sources of data that I used in the previously mentioned empirical analysis. Firstly, I describe the data I needed for calculating the Updated Bilateral Financial Secrecy Index as well as for creating the BFSI Supplied, BFSI Received, and the Net Bilateral Financial Secrecy Index. Secondly, I provide the description of the data I additionally used in order to make statements in the Results sections. And since I also try to make policy responses to the topics of lists of tax havens, corporate tax rates and exchange of information using my newly created Net Bilateral Financial Secrecy Index, I merge all the additional data sets with my subsequently made clean data sets with both 2017's BFSI values and Net BFSI values.

To make a proper description of the data I used for developing the Net Bilateral Financial Secrecy Index, firstly I need to delineate the fundamental indexes on which basis I create the new ones. Both Financial Secrecy Index and Bilateral Financial Secrecy Index are created by a combining the qualitative data and quantitative data to recognize the most significant tax havens globally in case of FSI or to recognize the most significant tax havens for specific jurisdictions bilaterally in case of BFSI.

4.1 Financial Secrecy Index

For Financial Secrecy Index, the quantitative data are obtained from the unilateral "publicly available data about the trade in international financial services of each jurisdiction(Cobham, Janský & Meinzer 2015), and are used for creation of the global scale weights (GSW) for each jurisdiction. The GSW are based on the IMF's Balance of Payments Statistics (BOPS), which contains data on international trade in financial services. For the GSW used for 2015's FSI, these data obtained relatively fully coverage for the last time, the BOPS data were available for 154 jurisdictions for exports of financial services (Tax Justice Network 2018). Data on stocks of portfolio assets and liabilities was gained from the IMF's web pages, more precisely from the Coordinated Portfolio Investment Survey (CPIS) and the International Investment Position (IIP) statistics (Tax Justice Network 2018). Conversely, the qualitative data for FSI are based on various laws, regulations. They are obtained by the Tax Justice Network (2018), and used for creation of qualitative component of the index for each jurisdiction, called secrecy score (SS), which creation is more described in Methodology part.

4.2 Bilateral Financial Secrecy Index

The Bilateral Financial Secrecy Index differs significantly from Financial Secrecy Index, primarily in the data given to estimate the quantitative component of the index. For BFSI the quantitative data are obtained from bilateral "International Monetary Fund's 2015 data on total cross-border portfolio investment as an approximation for financial services exports" (Janský, Meinzer & Palanský 2018), and are used for creation of the bilateral scale weights (BSW) for every relationship between two jurisdictions. Despite several attempts of maintaining the BFSI as close to FSI as possible, no bilateral data on exports of financial services does exist. As a qualitative component, BFSI uses the same data for secrecy scores as published in the 2018's version of the FSI, but slightly adjusts them in order to be more bilateral.

4.3 Updated BFSI, BFSI Supplied, BFSI Received and Net Bilateral Financial Secrecy Index

In order to develop the update version of BFSI, BFSI Supplied, BFSI Received as well as for creating the Net BFSI, I will use and examine the same source of data as Janský, Meinzer & Palanský (2018) did for creating quantitative component of BFSI, which is the so-called Coordinated Portfolio Investment Survey (CPIS). Since one of my aims is to recreate their methodology with updated data, to make subsequent empirical research more up-to-date, I will use the newest data from the Coordinated Portfolio Investment Survey, which are from year 2017, since for year 2018 not all the bilateral relationships have been already reported.

Generally, the Coordinated Portfolio Investment Survey (CPIS) is a "voluntary data collection exercise conducted under the auspices of the IMF that collects an economy's data on its holdings of portfolio investment securities" (International Monetary Fund 2015). All countries from the world are more that welcome to voluntarily take part in this survey by reporting the information about their economies, more precisely by reporting the data separately for long-term debt instruments, short-term debt instruments, equity and investment fund share.

The CPIS contains both data for both assets and liabilities, but it is not convenient to use both because of the strong correlation between them. Since using both assets and liabilities on their own is possible, it is crucial to know which one is more beneficial to use. Both Tax Justice Network (2018) and Janský, Meinzer & Palanský (2018) claims that overall the CPIS's assets as a main indicator are a better choice, since it will better serve for indicating the role of tax havens for other countries. Even though liabilities can reflect that "that French clients holding assets in German banks create a German services export, and a German liability" (Tax Justice Network 2018). The assets have bigger benefits such as that the jurisdiction directly report them, "so these data are more likely to capture the full range of assets, than liability data which are made up by inverting the stated asset claims of other jurisdictions, and hence are likely to be incomplete" (Tax Justice Network 2018).

After my deep analysis of this enormous dataset several conclusions could be written: The dataset includes data on the value of cross-border portfolio assets reported for 815,135 bilateral relationships from years 2008-2018, out of which only 121,394 were available or applicable. And out of which in 62,118 cases of bilateral relationship were actual reported "0" or an amount below the level of relevance for scale of the questionnaire (International Monetary Fund 2018). In 110 cases the reported value was negative, which happens in rare cases when short positions exceed the value of 'classical' assets. The smallest negative value of cross-border portfolio assets was reported in 2009 with the value -3,215,763,578.1034 of USD between United Kingdom and Egypt.

For the year 2017 the data set includes data on the value of cross-border portfolio assets for 13,195 bilateral relationships, out of which only 6,594 reported bilateral values off assets were bigger than zero. In comparison, for the year 2015 the data set included data on the value of cross-border portfolio assets for 13,521 bilateral relationships. Altogether, The CPIS provides the values of cross-border portfolio assets for 272 countries for each year, in 2017 the reported value was available or applicable only between 82 countries and 240 counter-part countries.

For creation of the Updated BFSI, BFSI Supplied, BFSI Received as well as Net BFSI I am going to use the same data source for the secrecy scores as FSI and BFSI. More precisely, the version of FSI rankings 2018 results I use is from 10 June 2018, which is freely available to download from the Tax Justice Network web pages. As Janský, Meinzer & Palanský (2018) did in case of BFSI, I also slightly altered the SSs for bilateral relationships, focusing on the bilateral relationships between inter-EU and 5 more countries, as described in the Methodology section.

4.4 Policies using the Net BFSI

4.4.1 EU lists of non-cooperative tax jurisdictions

Next data, which I am using in my empirical analysis are the lists of tax havens published by the European Union. European Union updates these list frequently, but they were officially firstly published in December 2017, when the EU published the blacklist of 17 countries and the 47 jurisdictions which

promised to cooperate and committed to reforms were put only on the grey list (European Commission 2017). Since no jurisdiction wanted to be officially published in the EU blacklist, the number of countries in the grey list was rising as opposed to the blacklist, where in the January 2018 only 9 countries left (European Commission 2018). In March 2018, the EU decided to start precisely releasing the information about what commitments the countries did in order to get on the grey list. More details and background information about the EU list of non-cooperative tax jurisdictions are mentioned in the Literature Review section.

I have used the version of the EU lists from the December 4, 2018, which was the most current one in February 2019. In this version only 5 jurisdiction were blacklisted and 65 greylisted, out of 92 screened. However, since the tax havens are very changeable current topic, in the process of creating the thesis the new EU lists of tax havens were published in March 12, 2019 with some diametrical changes. These changes as described below were so crucial that I additionally had to incorporate also the newest EU lists into my thesis.

Blacklist experienced major changes, since number of countries blacklisted has risen to 15. Each of the blacklisted countries from the December 2018 (American Samoa, Guam, Samoa, Trinidad and Tobago, and US Virgin Islands) stayed on the blacklist, since they have not taken any obligation from the fist ever blacklist issued. All ten remaining countries (Barbados, Unites Arab Emirates, Marshall Islands, Aruba, Belize, Bermuda, Fiji, Oman, Vanuatu, Dominica) have been moved from the greylist to blacklist, for not meeting their obligations as defined by EC. On the contrary, number of countries on greylist has decreased to 34, these countries has obligation to fulfill its commitments until the end of 2019 otherwise ended blacklisted. The greylist shrunk that much, because 25 countries were delisted and eliminated from the original screening, since they kept their world and have met all the promised obligations from 2017 by accepting several reforms and ameliorating their tax system (European Commission 2019). For saving up space these countries together with the both full EU lists of tax havens mentioned are in in Appendix A1.

4.4.2 Global lists of tax havens

The other data which I used for evaluating the global policy is the list of 52 tax havens by Johannesen & Zucman (2014) and the list of 52 tax havens by Hines (2010), both enclosed in the Appendix A3, A4. I have chosen them because they are the most respected and renowned list of tax havens as proven by IDEAS/RePEc economic papers database[2], since they are globally ranked among 10 most cited papers on tax havens from the last decade. IDEAS is the largest bibliographic database devoted to Economics, accessible freely on their internet web page. IDEAS is based on RePEc, which is a large volunteer effort with the aim to ameliorate the free spreading of research in Economics "which includes bibliographic metadata from over 2,000 participating archives, including all the major publishers and research outlets." (IDEAS 2019).

4.4.3 Corporate tax rates

Subsequent data which I used to obtain the corporate tax rate values of various countries are the data from the Corporate tax rates table available on the KPMG's website, which I have accessed March 25, 2019.

4.4.4 Automatic exchange of information

For another very important of the policy measures section, I have used the bilateral data from the OECD's website called Automatic Exchange Portal, more precisely the most up-to-date version, updated lastly on March 2019. By this most recent March 2019 update, the Automatic Exchange Portal includes over 3600 bilateral exchange relationships activated with respect to more than 90 jurisdictions. These jurisdictions are committed to the Common Reporting Standart (CRS), under Article 6 of the Multilateral Convention, the CRS MCAA, and also under the EU framework. Some jurisdictions also negotiated a bilateral agreements for the exchange of CRS information under bilateral tax treaties or tax information exchange agreements (OECD 2019b). I have processed the data from the Automatic Exchange Portal in a way as described in the Methodology section.

[2]As available from the IDEAS/RePec website: `https://ideas.repec.org/cgi-bin/htsearch?form=extended&wm=wrd&dt=range&ul=&q=tax+haven&cmd=Search%21&wf=4BFF&s=C&db=01%2F01%2F2009&de=IDEAS`

Chapter 5

Results

In this part of my thesis I would like to present all my estimated values of various indexes computed as mentioned in the Methodology part. I will provide the final results of the Updated Bilateral Financial Secrecy Indexes and its the demonstrative comparison with its older version. Subsequently, I will show the results of the Bilateral Financial Secrecy Index Received and Bilateral Financial Secrecy Index Supplied, comment on them and conclude several findings based on them. Then, I use these indexes in order to say which regions receives or supplies the most secrecy. Subsequently, I will most importantly precisely present the estimated values of Net Bilateral Financial Secrecy Indexes and provide the conclusions about the secretiveness of various countries, focusing on the EU member states. Then, I will provide the results of Net BFSI not only for year 2017, but also for almost the whole recent decade. Next, I will try to show the policy applications of this new index and evaluate policies measures against tax havens. Firstly, I compare my results of the Net BFSI adjusted for the EU member states with the EU lists of tax havens and secondly, I compare the original Net BFSI to two global list of tax havens. Then, I provide a prove of correlation between these Net BFSI values and corporate tax rates. And finally, I will present the results concerning the Automatic Exchange of Information, using Net BFSI I provide several findings about this policy measure.

5.1 Updated Bilateral Financial Secrecy Index

Firstly, I would like to present the results of the updated BFSI with BSW based on the 2017's version of IMF's CPIS, mentioned in methodology, and compare them to the ones estimated by Janský, Meinzer & Palanský (2018) with BSW based on the the 2015's version. I compared the indexes in order to see that even two years can make a difference, and that the preferences of investors from each country varies according to several reasons such as tax environment changes in jurisdictions they invest in.

In order to prevent any methodological or computational mistakes, I have created the BFSI also with BSW based on the 2015's version of IMF's CPIS, to precisely compare my outcomes with the ones from Janský, Meinzer & Palanský (2018). And since Janský, Meinzer & Palanský (2018) present their results of their BFSI between two various countries only in the table for Germany, Japan and USA and their top 10 secrecy jurisdiction, I needed to recreate this table. My BFSI 2015's results were the approximately the same as theirs, therefore I can claim that my results of the updated BFSI for the year 2017 are correct, since my calculations and methodology on recreating the BFSI are verified. For the purpose of seeing the two-years change in secrecy jurisdictions for a particular country, I have decided to present the updated version BFSI also on them. Since also as Janský, Meinzer & Palanský (2018) mention in their paper, between these three countries is considerable heterogeneity and also a significant number of one-off jurisdictions.

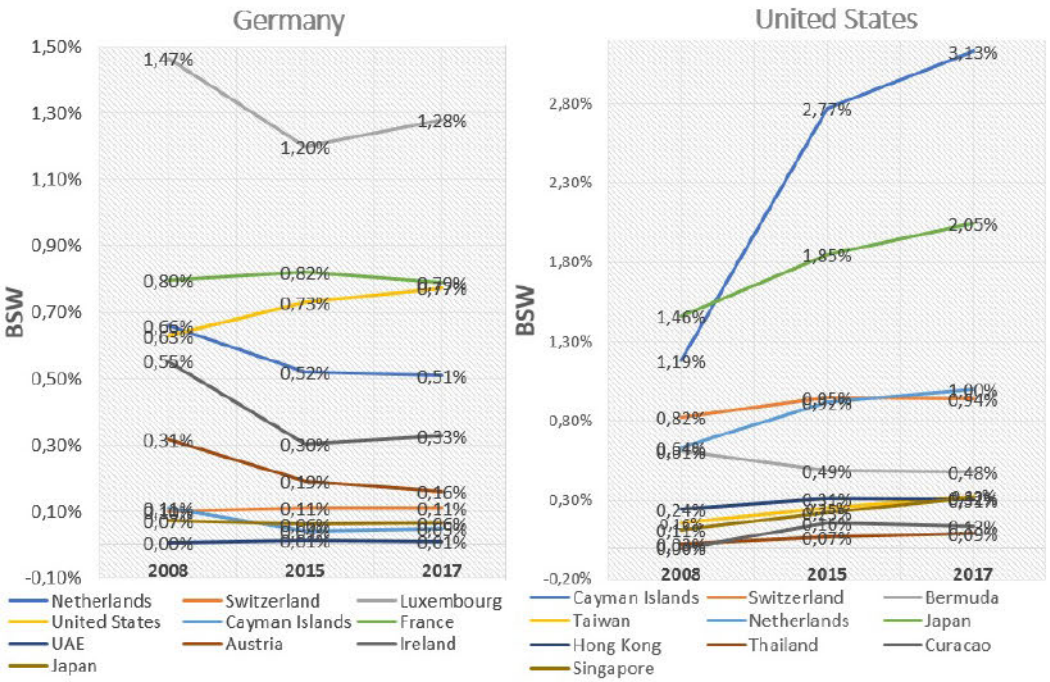
Table 5.1: Updated 2017's BFSI results for Germany, Japan and the US and their top 10 secrecy jurisdictions with 2015's BFSI results for comparison

2017´s Ranking	Germany's top 10 SJ	2017´s BFSI	2015´s Ranking	2015´s BFSI	Japan's top 10 SJ	2017´s BFSI	2015´s Ranking	2015´s BFSI	USA's top 10 SJ	2017´s BFSI	2015´s Ranking	2015´s BFSI
1	Netherlands	494,93	1	469.37	Cayman Islands	935,59	1	911.12	Cayman Islands	1190,06	1	1142,17
2	Switzerland	461,86	4	394.01	United States	661,78	2	673.97	Switzerland	943,25	2	947,92
3	Luxembourg	461,22	2	434.77	Switzerland	377,89	4	388.61	Bermuda	658,07	3	663,37
4	United States	423,58	3	415.18	Netherlands	366,46	3	400.20	Taiwan	646,26	5	585,97
5	Cayman Islands	291,21	5	283.52	Bermuda	307,19	6	281.26	Netherlands	620,19	4	602,96
6	France	274,48	6	266.37	Germany	282,70	5	295.27	Japan	606,06	6	585,18
7	UAE	241,96	7	231.92	Thailand	269,03	8	276.17	Hong Kong	520,65	7	522,67
8	Austria	203,31	10	187.71	Hong Kong	265,29	7	277.14	Thailand	500,63	9	447,49
9	Ireland	192,54	12	188,14	Taiwan	249,81	11	233,667	Curacao	461,94	8	488,92
10	Japan	191,17	9	188.94	Luxembourg	245,69	9	259.34	Singapore	443,65	16	396,955

Source: Author

As it can be seen from the table, the top ten secrecy jurisdictions for each of presented countries changed, but not only the ranking switched greatly. In case of Germany, the rank stayed unchanged only for the first and the fifth top secrecy jurisdiction. Germany receives from Netherlands still the most secrecy, even though it could be said Switzerland is slowly trying to take over the role, since it raised from the rank 4 to 2. For Germany, the only country change in the ranking is that Guernsey is no longer in the top ten secrecy jurisdiction and was replaced by Ireland. In case of Japan, the ranking stayed the same only for the 1. and 2. place, since the secrecy that Japan receives from both Cayman Island and United States, is by far the greatest, it is hard to overcome. For Japan, the only country change in top 10 SJ is that France was replaced by Taiwan. In case of United States, the ranking has not change much, the only country change is that Germany was replaced by Singapore. Overall it could be said that the most significant tax havens, which were part of all three "Top 10 secrecy jurisdictions for year 2015", did not deteriorate their position for year 2017. On the contrary, Switzerland only once to make its position stronger by 2 ranks, Cayman Islands did not change the rank once, and Netherlands worsen its position twice, but only by 1 rank.

Figure 5.1: Changes in BSW between years 2008, 2015 and 2017 for Germany and the United States and their top 10 secrecy jurisdictions



Source: Author

Just for comparison how the top secrecy jurisdictions of individual countries have changed across the time, I have also computed the BSW based on the 2008's version of IMF's CPIS, which are the earliest data available. The idea behind this is to see if almost 10 years distance, created some serious changes, or rather not and investors nowadays still stick to investing to similar countries as almost decade ago, from which could be possibly deduced that the tax environment between the particular state and its tax jurisdictions has not changed significantly. Therefore, I created the previous graph showing the changes of BSW for Germany, the United States and their the top 10 SJ. From the previous it can be seen that, that surprisingly, even the almost 10 years difference did not change extensively their relationships. It can be seen that investors from United States started investing to Cayman Islands almost three times more and that in general the relationship of US investors its top ten SJ flourished. On the other hand, investors from Germany tent to invest to their top 10 SJ less, for instance, to Ireland German investors invested 2 times less. Together these results provide important insights into the constancy of the major tax havens, from 2008 to 2017, the Cayman Islands, Netherlands and Switzerland still maintains the strong position of being in top five secrecy jurisdiction at least for Germany, Japan and United States. Overall, analysing the biggest changes in BSW in almost a decade, for instance, investors from Italy as well as France started investing to Luxembourg approximately two times more.

To show the benefits of the index and illustrate the main idea behind the Bilateral Financial Secrecy Index, I also present the values of all three BFSIs for the Czech Republic, the country where the university under which I write my thesis is situated, to show the variety and multiple utilization of this index as well as that there are various ways how to make use of BFSI, each person can discover main tax havens of any country according to his or her preference.

Table 5.2: Updated 2017's BFSI results for the Czech Republic and their top 10 SJ compared with 2008's, 2015's BFSI results

CR - Top 10 SJ 2017	2018's SS	2017's BSW	2017's BFSI	CR - Top 10 SJ 2015	2018's SS	2015's BSW	2015's BFSI	CR - Top 10 SJ 2008	2018's SS	2008's BSW	2008's BFSI
Netherlands	66,03	0,005%	104,13	Netherlands	66,03	0,004%	98,52	Netherlands	66,03	0,010%	133,04
Luxembourg	58,20	0,013%	98,87	Luxembourg	58,20	0,010%	91,98	United States	59,83	0,008%	90,86
United States	59,83	0,006%	84,91	Austria	55,90	0,011%	83,65	Germany	59,10	0,007%	85,99
Austria	55,90	0,008%	76,26	United States	59,83	0,005%	79,73	Luxembourg	58,20	0,008%	85,50
Poland	57,35	0,004%	65,89	Slovak Republic	54,90	0,007%	68,60	Austria	55,90	0,007%	72,25
Slovak Republic	54,90	0,006%	64,77	Switzerland	76,45	0,000%	63,20	Poland	57,35	0,004%	64,53
Switzerland	76,45	0,000%	60,64	Poland	57,35	0,004%	62,28	Cayman Islands	72,28	0,000%	63,05
Turkey	67,98	0,001%	60,58	Romania	65,53	0,001%	61,87	Greece	57,88	0,003%	61,61
Romania	65,53	0,001%	58,60	Germany	59,10	0,002%	56,40	Slovak Republic	54,90	0,005%	59,99
Germany	59,10	0,002%	56,71	Turkey	67,98	0,001%	53,88	Cyprus	61,25	0,001%	53,60

Source: Author

5.2 Bilateral Financial Secrecy Index Supplied and Bilateral Financial Secrecy Index Received

After looking at the illustration of the consequences of time on the Bilateral Financial Index for some particular countries, I would like to present in this part of the Results section my results of BFSI Received as well as BFSI Supplied and conclude several findings on them, since they are crucial for the Net BFSI. As mentioned in the methodology section, after the computation of BFSI, the process of creating BFSI Received and BFSI Supplied reside in grouping the relationship between two countries, either for the country who receives the secrecy from other jurisdictions, or for the counterparty who supplies the country to other jurisdiction. Because of that grouping, any more general information about the indexes are lacked. To be able to look at the results more precisely, rather that just comparing the BFSI indexes I have created tables using the ideas from the detailed analysis of methodology to be able to provide more information about the jurisdictions.

Table 5.3: Top ten jurisdictions with the highest BFSI Received

Jurisdiction	BFSI Received	Global Secrecy received	Suppliers of the secrecy	Overall BSW of the jurisdiction
United States	19559,4362	7,21%	84	22,46%
Luxembourg	14272,9197	5,26%	101	8,56%
United Kingdom	11508,4995	4,24%	95	6,32%
Ireland	10718,6408	3,95%	91	5,89%
Germany	10495,6944	3,87%	92	6,31%
Japan	10261,7812	3,78%	87	7,50%
Netherlands	9057,2042	3,34%	91	3,66%
France	8959,6222	3,30%	95	5,28%
Switzerland	8256,9008	3,04%	94	2,56%
Cayman Islands	7581,4976	2,80%	90	3,60%

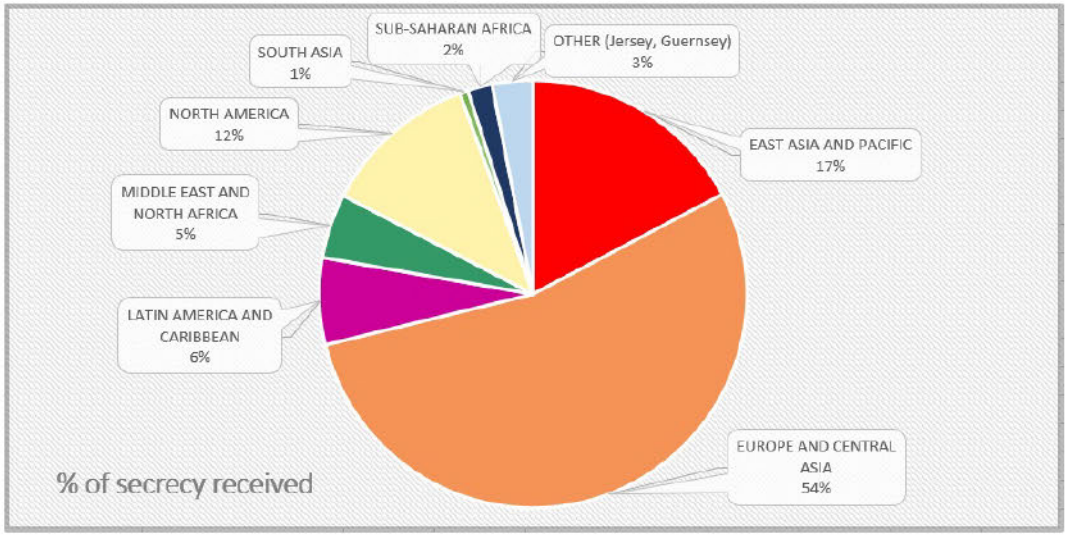
Source: Author

In the table above, the countries with the top ten largest BFSI Received are presented. Table 5.3 also provides an overview of the what is behind the secrecy received by the particular state, it shows the percentage of the global secrecy the particular jurisdiction received, the number of countries from which the particular country received the secrecy, and the overall bilateral scale weights for each country, as described in the detailed analyses of the methodology section. This scale represents how big the relationships between the one country and those particular countries who supplies the secrecy have a weight in global scale.

From the table above we can see that all these 10 countries have really high overall BSW of the jurisdiction, which means that the investors from these countries have deposited a lot of assets to various countries. To be more precise it can be said that out of all the cross-border portfolio assets reported and deposited between all the various pairs of countries, 72,14% of the them were deposited by these top 10 BFSI receivers. For instance, only the United States received almost the one fourth of all the assets received globally which denotes that investors from United States have deposited to 84 jurisdiction almost one forth of the sum of all ther reported global cross-border portfolio assets in 2017.

But the amount of secrecy received does not only depend on the quantity but also on the quality of the secrecy, so the secrecy received depends on the SS of the supplying countries. That is why the United States received only 7,21% of the global secrecy and these 10 countries together overall received 40,81% of all the secrecy reported generally received by the whole world. Among the top 10 BFSI Receivers, six of them are from the EU, they also have one of the highest numbers of countries which supplies the secrecy to them. Together these six countries receive 27,01% of the global secrecy received, all the 28 member states, receive together 46,05% of the global secrecy. So, these six countries receive 3/5 of the secrecy received by the whole EU.

Figure 5.2: Pie chart of secrecy received for 7+1 regional groups



Source: Author

The figure above shows the percentages of the secrecy received by 7 + 1 various regions of the world, as classified from the World Bank's organization, into which I divided the results of all 82 countries, for which I calculated the BFSI Received. The eighth regional group is created by Jersey and Guernsey, since they were not included in any of the 7 regions from the World Bank's organization. [1]

Table 5.4: Top ten jurisdictions with the highest BFSI Supplied

Counterpart jurisdiction	BFSI Supplied	Global Secrecy supplied	Receivers of the secrecy	Overall BSW of the jurisdiction	2018's SS
United States	14266,7674	5,26%	78	21,97%	59.83
Cayman Islands	12236,3652	4,51%	71	7,07%	72.28
Switzerland	10975,3145	4,05%	73	2,04%	76.45
Netherlands	9713,2692	3,58%	74	4,03%	66.03
Luxembourg	8918,8425	3,29%	72	7,10%	58.20
Hong Kong	7570,6302	2,79%	70	1,22%	71.05
Germany	7543,1414	2,78%	74	4,66%	59.10
Bermuda	6507,8643	2,40%	66	1,13%	73.05
Japan	6460,7381	2,38%	72	4,26%	60.50
Thailand	5504,0832	2,03%	51	0,25%	79.88

Source: Author

On the contrary in the Table 5.4 above, the countries with the top ten largest BFSI Supplied are presented. Also, an overview of the what is behind the secrecy supplied by the particular state is being presented next to the presented value of the BFSI Supplied, such as percentage of the global secrecy the the particular jurisdiction supplied, the number of countries to which the particular country supplied the secrecy, and also the overall bilateral scale weights for each country. This scale also represents how big the relationships between the one country and those particular countries, who receives the secrecy, have a weight in global scale. Since all the various countries receives from the particular country the same qualitative component of the Bilateral Secrecy Score Index, I present the one secrecy score for all the values, only the quantity of the secrecy varies according to various BSW.

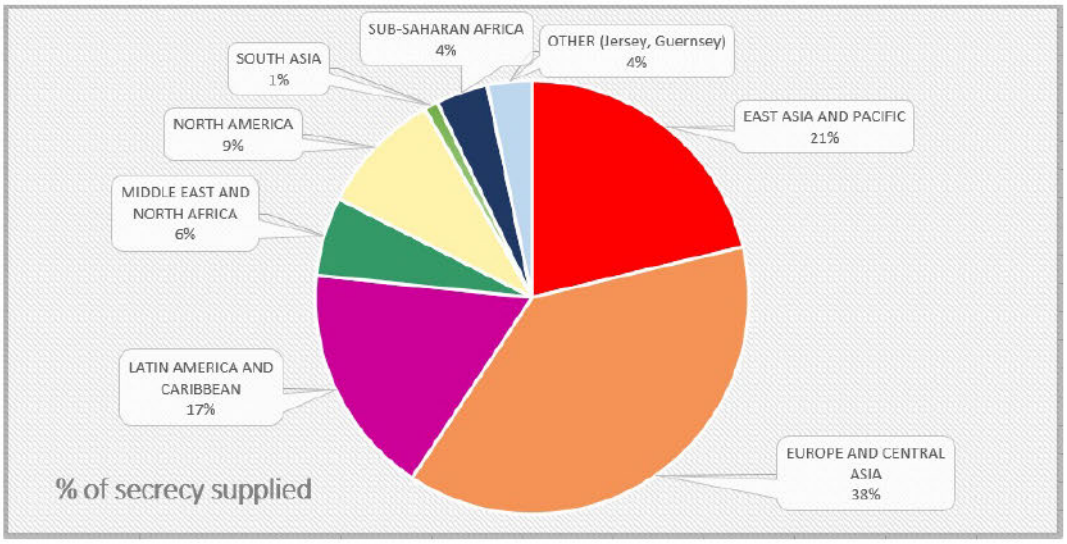
As can be seen from the table above, the United States have reported in IMF CPIS biggest number of relationships with other countries, not only for this table of 10, but among all 111 countries. The United States supply secrecy to 78 countries throughout the world, so the investors from the 78 states have deposited almost one forth of the sum of all global cross-border portfolio assets

[1] For the full list of Regions of the world including all the countries, as classified from the World Bank's organization, see Appendix.

in United States in 2017, which means that these 78 countries receives together almost one forth of the sum of all reported global cross-border portfolio assets supplied in 2017. Also, from table above the importance of both components of BFSI can be shown. Although the investors deposited to Hong Kong only about 1% of all the global cross-border portfolio assets, and on the contrary to Germany almost 5%, the Germany supplied less of the global secrecy then Hong Kong. The reason for that is the quality component of the BFSI, since the secrecy scores for Hong Kong is 71,06 and for Germany only 59,10.

As shown in Table 5.4, out of the ten biggest suppliers of the secrecy a four are from Europe and together supply almost 20% of all the reported secrecy, which was generally supplied by the whole world. Together EU member states supply 27,89%, and as previously mentioned receive 46,05%, so it could be generally said that countries from European Union receives more secrecy than they supply which can be also later seen from the values of Net BFSI. Since the sum of all the global secrecy received and supplied must be the same according to the methodology I used for calculation the BFSI Supplied and Received, it can be precisely said that overall the EU receives almost twice as much secrecy than it supplies.

Figure 5.3: Pie chart of secrecy supplied for 7+1 regional groups



Source: Author

The figure above shows the percentages of the secrecy received by 7 + 1 the World Bank's regions of the world, into which I divided the results of all 111 countries, for which I calculated the BFSI Supplied. This graph shows the division of the secrecy to regions very precisely, since I was able to compute the BFSI Supplied for 111 out of 112 countries for which the official SS by TJN was published. Generally, from the pie charts (Figure 5.2, Figure 5.3) it can be seen that the region Europe and Central Asia both receives and supplies the secrecy the most, region East Asia and Pacific is in the second place also for the both, and the third place varies for secrecy received is the region North America and for secrecy supplied is the region Latin America and Caribbean. Overall from the pie charts it can be seen that only the regions Europe and Central Asia, and North America receive more secrecy that they supply, therefore it could be said that as an approximation to NetBFSI, that are the only regions which generally loose out because of secrecy. On the other hand, all the other six regions supplies more secrecy than they receive, therefore it could be said that they win due to the secrecy. According to figures, the region which is likely to benefit the most thanks to secrecy is Latin America and Caribbean.

5.3 Net Bilateral Financial Secrecy Index

Finally, I would like to present and discuss my results of the Net Bilateral Financial Secrecy Index which I estimated for 68 jurisdictions, based on the previously described results of Bilateral Financial Secrecy Index Supplied and Bilateral Financial Secrecy Index Received, as mentioned in methodology. The idea behind the Net Bilateral Financial Secrecy Index is convenient, since every country is to some extent receiving the financial potentially harmful secrecy and it is supplying some amount of secrecy too, primarily if the particular country has a tax legislative advantageous for its surrounding countries. So, it really depends on the proportions of the amount supplied and received, to see which country wins due to financial secrecy and which loses. Therefore, it is pleasing to look at the results of the Net BFSI, which I will subsequently present precisely, and say who is due to the secrecy truly the winner or the looser. Thanks to this new index two terms arose. The terms are a Net Receiver or a Net Supplier and can be used for description of every jurisdiction for which we have the data. *Net Supplier* of secrecy can be defined as the jurisdiction which received less secrecy than it altogether supplied to other jurisdictions. On contrast, *Net*

Receiver of secrecy can be defined as the jurisdiction which on average supplied less secrecy than it altogether received from other jurisdictions.

Firstly, in the table below I present the top 15 jurisdictions with the highest Net BFSI, the top 15 Net Receivers, together with the values of BFSI Supplied and BFSI Received and their secrecy score. For BFSI Supplied I present the actual value of SS of the reviewing country, which the reviewing country supplies and for BFSI Received the weighted average secrecy score, which the reviewing country receives from other jurisdictions.

Table 5.5: Top 15 secrecy jurisdictions with the highest Net BFSI

Jurisdiction	SS of the jurisdiction	BFSI Supplied	Weighted average SS of counterparties	BFSI Received	Net BFSI
Cayman Islands	72.28	12236.3652	65.60101	7581.4976	4654.86757
Turkey	67.98	4408.4941	66.84825	542.5746	3865.91945
Thailand	79.88	5504.0832	65.81408	2384.2756	3119.80766
Switzerland	76.45	10975.3145	65.14634	8256.9008	2718.41374
Indonesia	61.45	3207.2759	65.61876	1026.9635	2180.31248
India	51.90	2554.7538	65.55447	584.5861	1970.16775
Panama	76.63	3160.4328	66.28677	1241.6851	1918.74775
Mexico	54.38	2758.0049	62.09555	993.9114	1764.09347
Ukraine	69.15	1675.6928	57.75892	40.4176	1635.27524
Venezuela	68.53	1840.4092	66.9244	206.4411	1633.96807
Malaysia	71.93	4296.0408	67.25823	2719.2188	1576.82197
Russia	63.98	3636.7400	64.24713	2090.6859	1546.05413
Romania	65.53	2217.5069	61.47751	744.4375	1473.06940
Bermuda	73.05	6507.8643	65.28386	5043.1111	1464.75318
Philippines	65.38	2460.5428	64.23853	1048.7736	1411.76922

Source: Author

The top three countries that benefit from secrecy the most are Cayman Islands, Turkey and Thailand. Although Cayman Islands are mentioned in both Table 5.3 and Table 5.4, so they are among both top 10 receivers of secrecy and the top 10 suppliers of secrecy, the Cayman Island still wins the most out of the whole world thanks to secrecy. The same holds for Switzerland who is also among the top ten countries who receives the most of secrecy as well as who supplies it, but still is the forth country who benefits from secrecy the most. Some countries could end up in my ranking as highly benefiting from secrecy, just because not enough data were reported on the investors from the particular countries investing offshore, so BFSI Received could have been computed only with those restricted data. As can be seen from the table, for example

Ukraine and Venezuela have really low value of BFSI Received, which could most probably be the reason why they ended up among the 15 jurisdiction most benefiting from secrecy. The reason for that could simply be that not enough data was reported on investors from Ukraine or Venezuela and their assets deposited offshore.

Among the top 15 jurisdictions with the highest Net BFSI the most represented continent is Asia with 7 states situated there, second is North America with 4 counties. Whereas none of the top 15 states are from from the European Union, which could be overall presumed from Tables 5.3 and 5.4. From this table we can also see that among the top 15 countries winning the most due to secrecy are 3 small islands (Cayman Islands, Panama, Bermuda), which are still generally perceived by public and some of the literature on offshore finance as the main tax havens, as mentioned by Cobham, Janský & Meinzer (2015).

Table 5.6: Top 15 secrecy jurisdictions with the lowest Net BFSI

Jurisdiction	SS of the jurisdiction	BFSI Supplied	Weighted average SS of counterparties	BFSI Received	Net BFSI
United Kingdom	42.35	3394.5147	65.57412	11508.4995	-8113.98480
Ireland	50.65	4723.5566	65.30947	10718.6408	-5995.08418
Luxembourg	58.20	8918.8425	65.95135	14272.9197	-5354.07717
United States	59.83	14266.7674	65.57412	19559.4362	-5292.66875
Norway	51.58	2342.9068	64.20836	7428.4088	-5085.50198
France	51.65	5128.2369	64.20836	8959.6222	-3831.38532
Japan	60.50	6460.7381	65.30213	10261.7812	-3801.04308
Sweden	45.48	2144.0223	64.61093	5820.5140	-3676.49168
Belgium	44.00	1639.8879	62.966	5261.6293	-3621.74137
Italy	49.48	3145.5855	63.6128	6696.7343	-3551.14881
Denmark	52.50	2643.5020	65.54686	6171.5197	-3528.01770
Canada	54.75	4315.9873	65.39756	7425.5903	-3109.60295
Germany	59.10	7543.1414	63.97278	10495.6944	-2952.55302
Finland	52.70	2370.3106	63.85709	4684.1901	-2313.87949
Austria	55.90	2949.5180	63.90603	5133.6282	-2184.11016

Source: Author

Secondly, I present above the similar table to the previous one with a difference of countries having the lowest Net BFSI. As can be seen from the table below, the top three countries that loose due to the secrecy the most are United Kingdom, Ireland and Luxembourg. Since United Kingdom is mentioned in Table 5.3, as the third country receiving the most of the secrecy, and is not mentioned in Table 5.4, it is not unpredictable that United Kingdom is a

jurisdiction who loose the most because of the secrecy. According to my results, Ireland is the second country who loose the most because of secrecy, although it has been often perceived as an European tax haven, as for instance mentioned by Desai, Foley & Hines (2005a). But for example Tobin & Walsh (2013) explains in its study that Ireland should not be perceived as a tax haven, my results supports that statement. Also the United States is the fourth country with the lowest Net BFSI, so it is the fourth country which out of all reported countries loose the most, even though the US is the top secrecy receiver out of all reported states as well as the top secrecy supplier, which could be also caused by the availability of the IMF CPIS data. So as the Cayman Islands and Switzerland, the United States as well as Luxembourg, Japan and Germany are in both Tables 5.3 and 5.4, with the difference that the Cayman Islands and Switzerland are the countries who wins the most, whereas the United States, Luxembourg, Japan and Germany are countries who loose the most.

Among the top 15 Net Receivers of the secrecy, the European countries are represented significantly more than any other countries from different continents, there are 12 of them among the top 15 secrecy jurisdictions with the lowest Net BFSI, which means that on the bigger scale they are not benefiting from the secrecy generally much, but on the contrary they loose. So, it could be overall conclude that in Europe there is not the highest concentration of tax havens, as can be also seen from the following presented results of Net BFSI for all 28 member states of European Union except Croatia, since I have been not been able to compute Net BFSI, but only the BFSI Supplied for Croatia (1153,96), which means that the countries from around the whole world (precisely 52 countries) reported the value of cross-border portfolio assets deposited in Croatia, but the Croatia it self did not report any value to the IMF's CPIS.

Table 5.7: The Net BFSI of 27 EU member states

Jurisdiction	SS of the jurisdiction	BFSI Supplied	Weighted average SS of counterparties	BFSI Received	Net BFSI
Romania	65.53	744,44	61.47751	2217,51	1473,07
Poland	57.35	1547,10	61.71573	2524,49	977,39
Netherlands	66.03	9057,20	64.50919	9713,27	656,07
Greece	57.88	1532,05	59.64866	1557,41	25,36
Cyprus	61.25	1559,49	64.10099	1484,88	-74,61
Hungary	54.70	1549,99	63.71028	1452,67	-97,32
Lithuania	46.78	997,94	60.59016	497,39	-500,55
Czech Republic	52.93	1863,29	62.04777	1347,01	-516,29
Bulgaria	54.18	1243,26	61.44745	674,79	-568,47
Slovak Republic	54.90	1602,47	60.55756	1018,15	-584,32
Portugal	54.68	2683,21	62.10953	1944,62	-738,60
Latvia	57.38	1440,55	61.70064	659,85	-780,70
Estonia	50.85	1301,68	61.91667	401,07	-900,61
Spain	47.70	3799,95	61.21194	2823,44	-976,51
Slovenia	41.83	1732,98	61.22439	449,65	-1283,33
Malta	60.53	2517,30	63.51019	1115,79	-1401,52
Austria	55.90	5133,63	63.90603	2949,52	-2184,11
Finland	52.70	4684,19	63.85709	2370,31	-2313,88
Germany	59.10	10495,69	63.97278	7543,14	-2952,55
Denmark	52.50	6171,52	65.54686	2643,50	-3528,02
Italy	49.48	6696,73	63.6128	3145,59	-3551,15
Belgium	44.00	5261,63	62.966	1639,89	-3621,74
Sweden	45.48	5820,51	64.61093	2144,02	-3676,49
France	51.65	8959,62	64.20836	5128,24	-3831,39
Luxembourg	58.20	14272,92	65.95135	8918,84	-5354,08
Ireland	50.65	10718,64	65.30947	4723,56	-5995,08
United Kingdom	42.35	11508,50	65.57412	3394,51	-8113,98

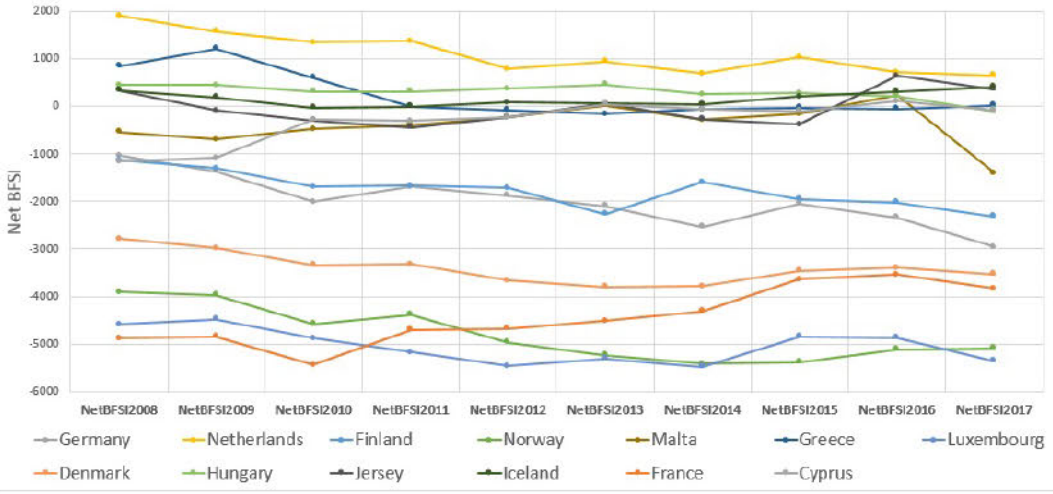
Source: Author

As can be seen from the table above, only four countries in EU could be defined as a Net Suppliers: Romania, Poland, Netherlands, and Greece. Otherwise, the majority of EU countries are Net Receivers, which supports the statement what I have presumed before, since while analyzing the results of BFSI Supplied and BFSI Received I have come to the conclusion that the EU countries altogether receive twice more the secrecy than they supply. Overall the EU member states loses due to secrecy.

Subsequently, I want to provide findings whether the Net BFSI varied throughout the years. More precisely, for instance if all the countries which can be denoted as Net Suppliers now, always has been the so-called Net Suppliers or Net Receivers, and vise versa. For computation of Net BFSI throughout the years I have used 2018's secrecy scores, since as I am mentioning in the data

section, the fist published secrecy scores from 2009 were computed by TJN only for 60 countries and also its methodology was significantly improved throughout the years, even the 2015's version obtained some serious inefficiencies.

Figure 5.4: The Net BFSI history of EU states



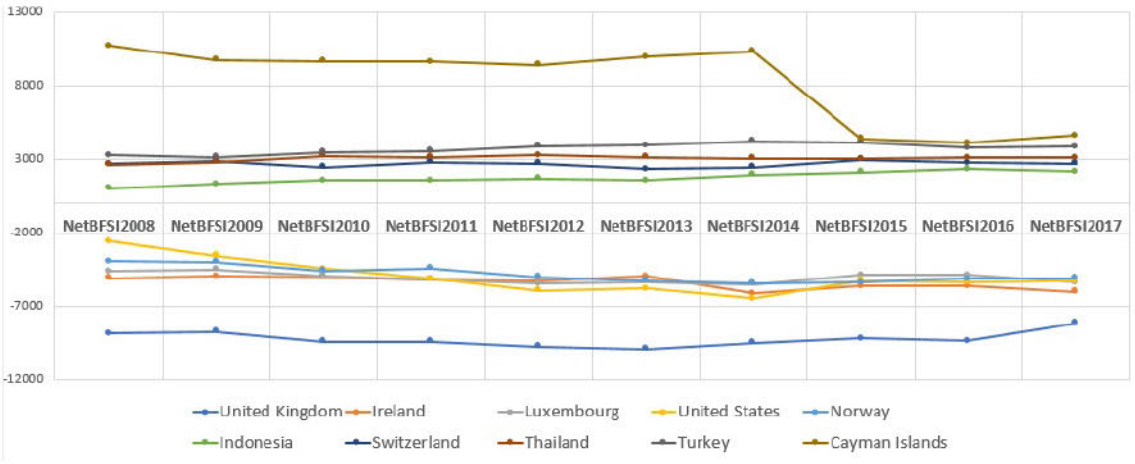
Source: Author

First of all in the figure above I present changes of Net BFSI from years 2008 to 2017 for EU member states, more precise for the 10 members which secrecy changed significantly. Overall, for the majority of EU countries the tendency of diminishing of the Net BFSI prevailed. For instance, for Netherlands the net value of secrecy decreased more that twice, so the Netherlands wins due to secrecy two times less in 2017 than in 2008. But the biggest drop in Net BFSI experienced Germany, which already were loosing due to secrecy in 2008, but in 2017 it looses three times more. On the contrary, the biggest increase of the Net BFSI value experienced Cyprus, it no longer looses because of the secrecy that much and even started benefiting fromit in 2013 and 2016. Malta experienced significant changes throughout the years, as well as Greece which also changed status of winning or loosing because of secrecy a few times. And for instance, Hungary became from Net Supplier in 2017 Net Receiver, so it newly began to lose due to the secrecy.

Generally, the tendency of Net BFSI of Net Receivers tend to decrease even more, so the majority of the 2017's Net Receivers loses due to secrecy even more in 2017 than in 2008. On the contrary, the tendency of Net BFSI of Net Suppliers tend to increase even more, so the majority of the 2017's Net Suppliers wins due to secrecy more in 2017 than in 2008 as presented on top 5 Net Supplier and top 5 Net Receivers in the following graph. Exception of

this trend are Cayman Island, for which Net BFSI decreased more than two times between 2014 and 2015, looking closer at this drop, the BFSI Supplied have not almost changed, whereas the BFSI Received increased four times, so investors from Cayman Island started investing more offshore, or possibly Cayman Island started reporting the assets held offshore more.

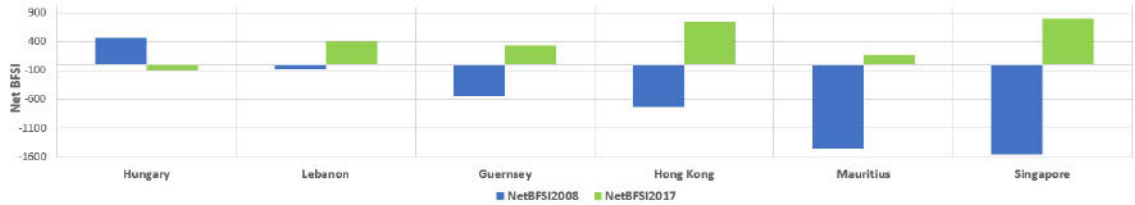
Figure 5.5: The Net BFSI history of top 5 countries with the highest Net BFSI and the 5 countries with the lowest Net BFSI



Source: Author

The countries which from 2008 to 2017 change the status of being Net Supplier or Net Receivers are: Hungary, Mauritius, Guernsey, Lebanon, Singapore, which went from 2008 to 2017 throughout the biggest change, from Net Receiver (Net BFSI= -1552) to Net Supplier (Net BFSI= 800) and Hong Kong which change of Net BFSI from -739,85 to 735,92.

Figure 5.6: The changes of countries from 2008's Net Receiver to 2017's Net Supplier and vice versa

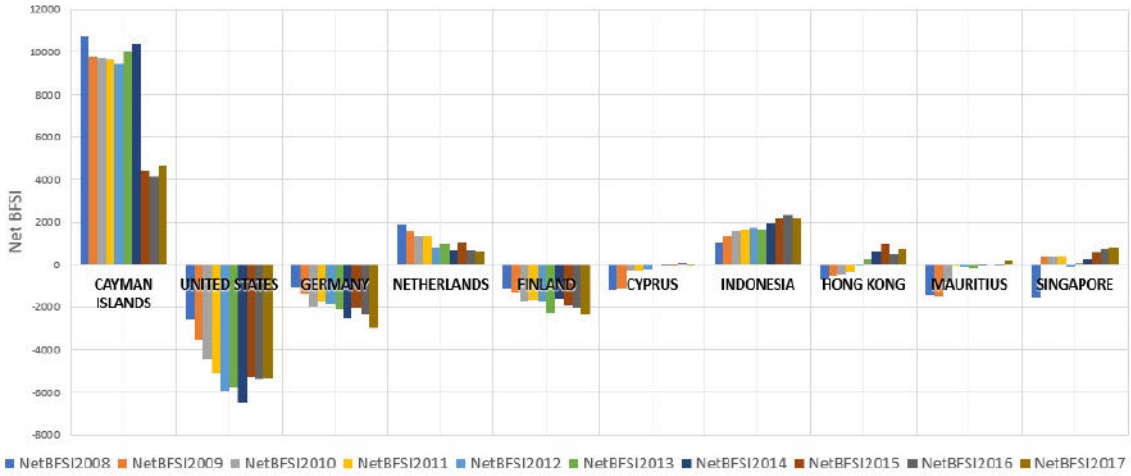


Source: Author

As was one of my aims, I established the Net Bilateral Financial Index for all the years fully available in the data set (2008-2017) in order to compare the values of Net BFSI throughout the most recent decade and primarily to see how particular countries changed and dealt with the secrecy. Each jurisdiction throughout the years could change with their tax systems or make reforms,

which led to either the jurisdiction to become even more harmful or it could ameliorate. Overall, the 5 biggest drops in Net BFSI and 5 biggest increases in Net BFSI can be seen in the following graph, as presented from left to right.

Figure 5.7: The Net BFSI history of the 10 countries which experienced either a biggest increase or decrease in Net BFSI

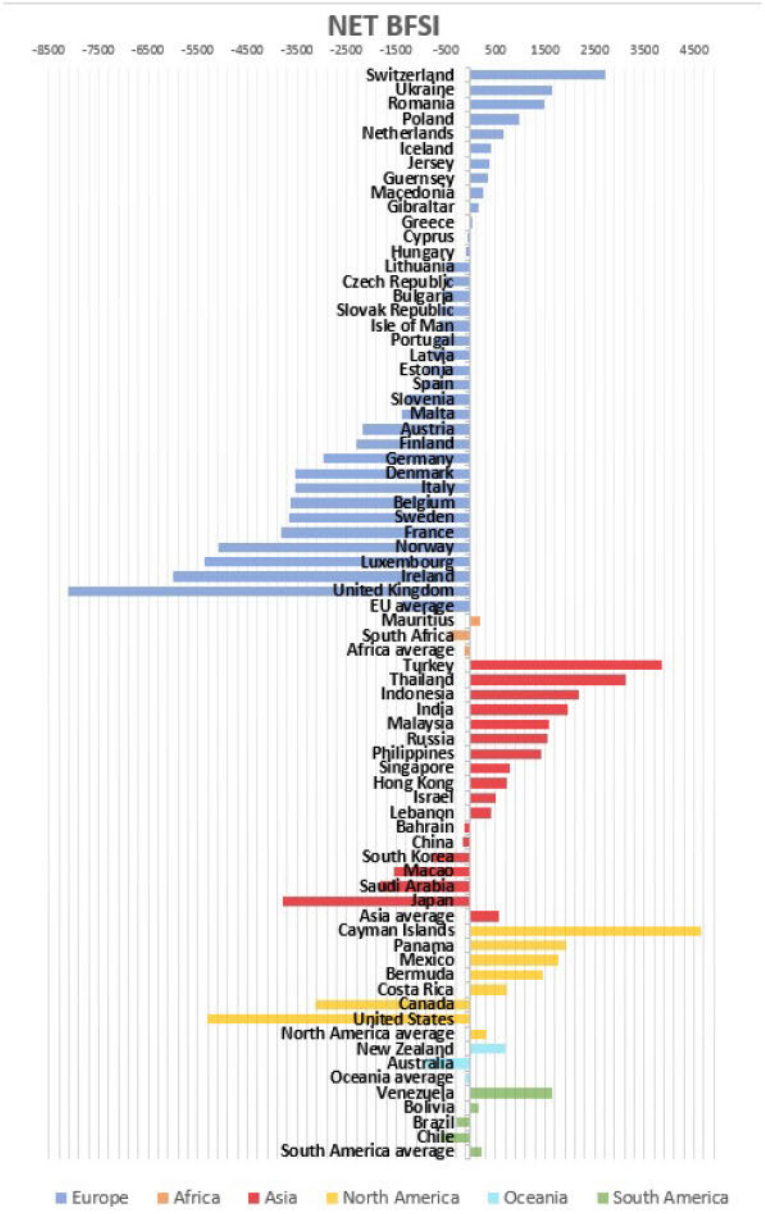


Source: Author

The change of Net BFSI of any jurisdiction can indicate some likely scenarios. Such as if the country with a high Net BFSI value changed to rather small, it might mean, that the country started being less attractive for the entities from other countries or more probably has made some significant changes in its tax system or in other area regarding the the anti-offshore policy. As can be seen from the previous figure, this could be the case of for instance the Cayman Islands which experienced during the decade decrease by more that 50%. On the contrary, if a jurisdiction with a really low Net BFSI change to smaller negative number or even a slightly positive, that could probably mean that the its anti-offshore policies ameliorated from the view of the particular country since the jurisdiction looses less due to financial secrecy or even started to benefit from it. From the graph above, it can be seen that this could be the case of Cyprus, Mauritius or even Hong Kong and Singapore. Generally, since countries differs, these scenarios can change from country to country according to its conditions of the economy, politics, environment, geography and many others.

Next, I divided countries according to the continents to present altogether my results of Net BFSI, because the division according to World's Bank Group's region was not balanced, since my Net BFSI results are limited, and I still wanted to present the Net BFSI also from the geographical view.

Figure 5.8: The Net BFSI and continents

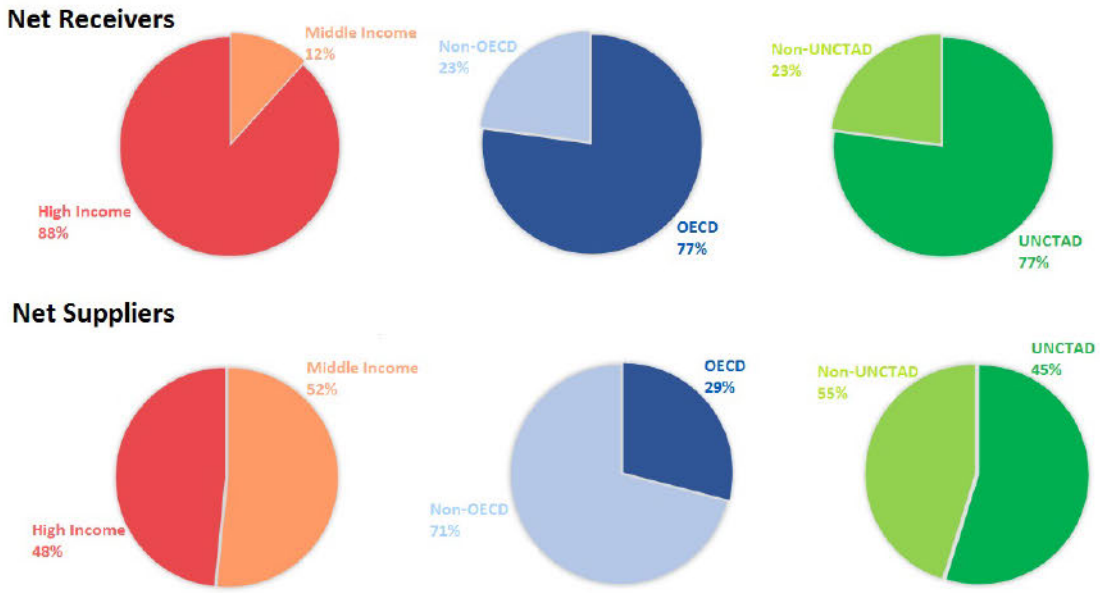


Source: Author

From this graph, it can be also seen that the majority states from Europe are losing because of secrecy as opposed to Asia, where the majority of states are winning thanks to secrecy. I have also calculated the average Net BFSI for each continent presented as part of the graph, and from this particular graph, we can precisely see from how many countries the averages are computed in order to see the importance of the average. As can be seen from the graph as well as from the average Net BFSI of the continents it can be said that overall only North America and Asia is benefiting from the global secrecy.

Finally, I have divided the countries according to the results of Net BFSI to countries which wins thanks to secrecy, since Net BFSI is positive (Net Suppliers) and to countries which loses because of the secrecy, since their Net BFSI is negative (Net Receivers) and use them for further findings. In my data the number of countries with negative Net BFSI is pretty much balanced with the number of countries with positive Net BFSI, there are 31 Net Receivers and 37 Net Suppliers. The following pie charts sum up the information's regarding three topics: Income groups of the countries, OECD membership and UNCTAD membership: [3]

Figure 5.9: The Net Suppliers, Net Receivers and income groups, OECD membership and UNCTAD membership



Source: Author

I have used the division by income groups as defined in a World bank database, which divided the countries from the whole world into three major income groups, but I used only two of them, since none of the countries for which I have computed the Net BFSI was in low-income group. High-income economies have 2017's GNI per capita higher than $12,055, whereas middle-income

[3] I have obtained the information about OECD and its members from the OECD official webpage: `http://www.oecd.org/about/membersandpartners/`, about the World's Bank Group's regions and income groups also from its official websites with World Bank Open Data: `https://data.worldbank.org/` and about UNCTAD from the web page: `https://unctad.org/en/Pages/About%20UNCTAD/UNCTADs-Membership.aspx`.

economies between $996 and $12,055. But the World's Bank Group's regions does not include jurisdictions Jersey and Guernsey, therefore needed to find the GNI per capita of these two countries on the webpages of their governments.

While looking at the OECD group, I have been able to calculate the Net BFSI for all of the members. From the pie charts, it can be seen that the OECD members are primarily Net Receivers, which can be also seen for example from the Table 8, since all of the top 15 Net Receivers are OECD member states. According to my findings only 9 of OECD members out of 36 are winning due to global secrecy. Which makes sense since OECD, so-called an Organisation for Economic Co-operation and Development, as mention in the Literature Review, is an institution striving for an economic and social well-being of people around the world by making efforts to promote some international policies, to ameliorate the national policies. The similar holds for UNCTAD since their aim is to create policies connected to all aspects of development and also to ameliorate the status of trade and investment as well as helping the developing countries. Therefore it is logical that members from these two organisations will not likely posses a harmful tax system or have the aim of benefiting the most from the secrecy at the expense of other states, since both of these organisations cares about the well-being and of the whole world and making it balanced by establishing various international standard policies.

5.4 Policies with the Net Bilateral Financial Secrecy Index

One of my main aims is to evaluate global policies against tax havens as well as the EU policies. Therefore, in this section I intent to discuss the resent already existing policy measures against tax havens and financial secrecy in general and its possible deficiencies. Since countries with high Net BFSI are those countries which truly wins thanks to the financial secrecy, these countries should be generally more likely to be perceived as tax havens. Firstly, to confirm this hypothesis I have selected renowned and credible lists of tax havens, with which I will compare my results of the newly created Net BFSI.

5.4.1 EU lists of non-cooperative tax jurisdictions

Firstly, I try to evaluate the policy measures against tax havens of the greatest and most important political and economic union for our region, the European Union. Since it also released in a recent past a respected often updated list of non-cooperative tax jurisdictions, as described in the Literature Review section and Data section.

Table 5.8: Top 15 Net Suppliers for EU member states and the EU 12/2018 blacklist and greylist

Jurisdiction	BFSI Received EU	BFSI Supplied EU	Net BFSI EU	blacklist	greylist
Switzerland	2368,54	5091,37	2722,83	0	1
Cayman Islands	1585,54	4215,47	2629,93	0	1
Turkey	117,40	2104,51	1987,11	0	1
Thailand	454,60	2129,68	1675,08	0	1
Hong Kong	1009,53	2486,47	1476,94	0	1
United States	4135,11	5606,78	1471,68	0	0
Bermuda	1003,11	2418,51	1415,40	0	1
Singapore	583,49	1932,35	1348,86	0	0
Malaysia	319,09	1497,80	1178,71	0	1
Jersey	1186,08	2312,88	1126,81	0	1
Panama	206,54	1326,65	1120,10	0	1
Indonesia	264,82	1364,86	1100,04	0	0
Guernsey	1154,62	2243,92	1089,30	0	1
Russia	809,63	1815,12	1005,48	0	0
Mexico	299.48	1300,17	1000,69	0	0

Source: Author

On the previous table the results of the 15 top countries with the highest Net BFSI adjusted for the EU member states are presented together with the values from the EU list of tax haven from the December 2018. The process of creating the Net BFSI for EU member states is described in the methodology section, but from the table below it can be seen that the results of the Net BFSI for EU member states differs noticeably from the original Net BFSI of the whole world. The country which benefits most from the secrecy connected to EU is Switzerland. And for example, the highest original Net BFSI of Cayman Islands decreased by almost an half when taking account the secrecy connected to the EU, so it benefits considerably less from it than from the global secrecy. The table below compared to the previous table of top 15 original Net Suppliers (Table 5.5) lacks countries such as India, Ukraine, Venezuela, Philippines, but these countries are not on the blacklist nor on the greylist. On the contrary, the new countries that appears among top 15 Net BFSI Suppliers for EU member states, such as Hong Kong, Jersey or Guernsey are indeed listed in EU greylist. Therefore, it could be said that the EU policy measures against tax havens

are satisfactory, since 10 out of top 15 countries with the highest Net BFSI for EU member states are listed on the EU greylist. So 10 from the 15 jurisdictions which are winning the most thanks to the secrecy connected to EU are indeed being made by the European Commission to meet their obligations, to accomplish the criteria in order to not be blacklisted. Considering the global secrecy and the original Net BFSI, it could be said that 7 from 15 countries states winning thanks to global secrecy are listed on the EU greylist as well, so the aims of EU's policy measures against financial secrecy sometimes overlap with those of the whole world. Since EU have undertaken some steps in order to oblige the harmful secrecy jurisdictions to make reforms in order to comply more with the international standards.

Since tax havens are so current topic for which the economy, politic and legal background is evolving rapidly, the EU list of tax havens was updated very recently in the process of writing my thesis, more precisely on March 12, 2019. Countries listed in both greylist and blacklist changed significantly, the precise description how is in the data section. Therefore, to make my thesis the most up-to-date I present these changes by the following table:

Table 5.9: Top 15 Net Suppliers for EU member states and the EU 03/2019 blacklist and greylist

Jurisdiction	BFSI Received EU	BFSI Supplied EU	Net BFSI EU	new blacklist	new greylist
Switzerland	2368,54	5091,37	2722,83	0	1
Cayman Islands	1585,54	4215,47	2629,93	0	1
Turkey	117,40	2104,51	1987,11	0	1
Thailand	454,60	2129,68	1675,08	0	1
Hong Kong	1009,53	2486,47	1476,94	0	0
United States	4135,11	5606,78	1471,68	0	0
Bermuda	1003,11	2418,51	1415,40	1	0
Singapore	583,49	1932,35	1348,86	0	0
Malaysia	319,09	1497,80	1178,71	0	0
Jersey	1186,08	2312,88	1126,81	0	0
Panama	206,54	1326,65	1120,10	0	0
Indonesia	264,82	1364,86	1100,04	0	0
Guernsey	1154,62	2243,92	1089,30	0	0
Russia	809,63	1815,12	1005,48	0	0
Mexico	299.48	1300,17	1000,69	0	0

Source: Author

As can be seen from the table above, even for this sample of top 15 jurisdiction the lists changed significantly. Only for the top four jurisdiction which benefits the most from the secrecy connected to EU the lists stayed the same. The reason for that is that they did not properly succeeded in meeting all the obligations as promised to the EC, which can be seen as logical, since these

four countries are benefiting the most from the secrecy connected to EU, it is likely to better for them not to make their tax system unharmful. But at least the European Union succeeded in identifying them a putting all these 4 largest winners due to financial secrecy under the screening process of the Code of conduct group. And perhaps hopefully in the future until the end of 2019, the European Commission will make them finally implement the reforms proposed by the EU as promised.

The major change is primarily shown on the jurisdictions: Hong Kong, Bermuda, Malaysia, Jersey, Panama and Guernsey which together with other 20 jurisdictions were delisted from the grey list by March 2019 and no longer being screened, thanks to accomplishing making the reforms and meeting their obligation as promised to the EC. The precise date of their accomplishment is not known, but most probably was not earlier than December 4 since it would be probably mentioned in the December lists, and not longer than March 12, since it was the date of the press release of the new list. It is likely to be the end of the year, since they should have met the 2018 deadline to complete their reforms. It is definitely a great success of each jurisdiction that they managed to meet all the obligation given by EC as well a great success for the EU, since the EC made them make reforms and ameliorate their tax system by applying sanctions in case of being blacklisted. Even though these countries have recently implemented these changes in their tax systems, its whole effect is not that likely to be visible yet in data, since it takes most probably longer time to be reflected in the data from various resources, such as for example IMF's CPIS dataset. That could be the reason why in the previous table the new March grey list does not comply with the Net BFSI results for EU countries that well as with the 3 months older December greylist.

On the contrary, only Bermuda together with 9 other jurisdictions changed its place from the December greylist to March blacklist, since it did not meet the meet any obligations given by the EC. As can be seen from the table Bermuda is so far the sixth jurisdiction who benefits the most due to the secrecy connected to the EU and since it is not willing to cooperate with the EU and not do any reform to their harmful tax system, its position can by time get even higher. From this it could be seen that as mentioned in the Literature review, the tax haven is really very contemporary and changeable topic, and the next development of this issue is unsure. Therefore, the more evaluation

and works on the topics of tax havens and financial secrecy is done the better for the anti-offshore policy

Overall according to my findings, the European Union succeeded in identifying the secrecy jurisdiction which benefits the most from the secrecy. As can be seen from the newest lists of tax havens March 2019 the EU even made recently six out of the 15 secrecy jurisdiction, which harmed the EU the most according to my findings, ameliorate their tax system, which results will hopefully reflect in the 2019's data. To conclude, the is EU indeed successful in the fight against the jurisdictions benefiting the most from secrecy, although to make its policy even better I would suggest the EU to start screening and cooperating with countries such as Singapore, Indonesia, Russia and Mexico as well United States, since they are among the 15 most benefiting countries from the secrecy connected to EU. Also the fact that EU did not included United States in their blacklist has been already criticized by several economists and politicians, as mentioned in the Literature Review section.

5.4.2 Global lists of tax havens

In order to look closer at the global policy against tax havens, not only EU list of non-cooperative jurisdictions can be helpful, but also specialised lists of global tax havens could be needed. Therefore, to evaluate the global policy against the jurisdictions which wins the most thanks to secrecy, I have chosen the two most renowned and respected ones according to the IDEAS/RePEc economic papers database as mentioned in the data section. The first one which I have chosen is the list of 52 tax havens identified by Johannesen & Zucman (2014), the second one is the list of 52 tax havens identified by Hines (2010) as enclosed in the Appendix.

The table below shows if the top 15 jurisdictions most benefiting from the global secrecy are listed in global tax havens' lists made by Johannesen & Zucman (2014) and Hines (2010). Unfortunately, these blacklists do not cover the jurisdiction winning due to global secrecy as remarkably as the EU list of non-cooperative jurisdictions the winning jurisdiction for EU. Since as it can be seen in the following table only 4/5 from the 15 were determined as tax havens by these blacklist. So possibly a newer more contemporary complex list of tax

havens in the world is needed oriented also at the jurisdictions most benefiting thanks to secrecy, in order to cover all the possible indicators of tax havens.

Table 5.10: Top 15 Net Suppliers and global lists of tax havens

Jurisdiction	BFSI Received	BFSI Supplied	Net BFSI	Johannesen and Zucman (2014)	Hines (2010)
Cayman Islands	7581,50	12236,37	4654,87	1	1
Turkey	542,57	4408,49	3865,92	0	0
Thailand	2384,28	5504,08	3119,81	0	0
Switzerland	8256,90	10975,31	2718,41	1	1
Indonesia	1026,96	3207,28	2180,31	0	0
India	584,59	2554,75	1970,17	0	0
Panama	1241,69	3160,43	1918,75	1	1
Mexico	993,91	2758,00	1764,09	0	0
Ukraine	40,42	1675,69	1635,28	0	0
Venezuela	206,44	1840,41	1633,97	0	0
Malaysia	2719,22	4296,04	1576,82	1	0
Russia	2090,69	3636,74	1546,05	0	0
Romania	744,44	2217,51	1473,07	0	0
Bermuda	5043,11	6507,86	1464,75	1	1
Philippines	1048,77	2460,54	1411,77	0	0

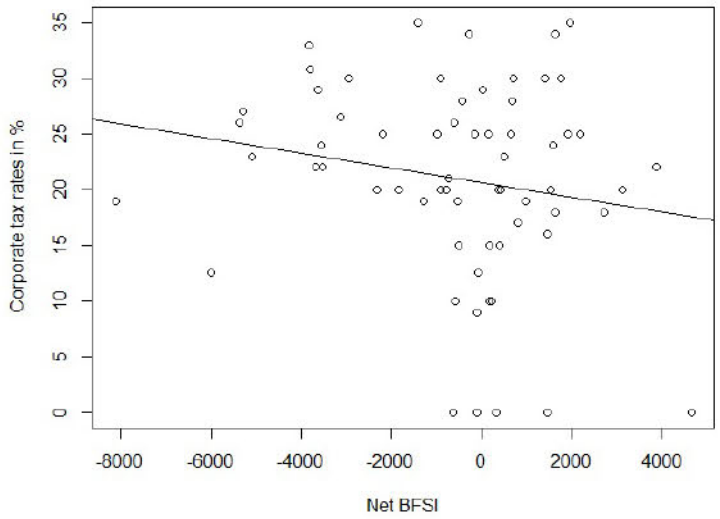
Source: Author

Even though the list of tax havens identified Johannesen & Zucman (2014) and Hines (2010) is notably inconvenient for my findings, it is not in my competence nor ability to create my own complex global list of tax havens containing all the needed indicators and its methodology. But I hope that while some economists will be creating a new list of tax havens, they could scan through my thesis and somehow include which jurisdiction wins and which looses due to secrecy, or at least think about it as a possible approach, which could inspire them to do some further research.

5.4.3 Corporate tax rates

As mentioned in the methodology section, although there is an immense number of possibilities why certain investor from various countries receives secrecy from various jurisdictions, so also why the particular jurisdiction is winning or loosing due to financial secrecy. Still one of my aims is to state, if the level of corporate tax rate of the secrecy supplier is also a factor, more precisely if the level of corporate tax rate of a country has some role if the country wins thanks to the secrecy or looses. The following graph represents the relationship between the 2019's Corporate tax rates and the Net BFSI.

Figure 5.10: Scatter plot of the Net BFSI and corporate tax rates



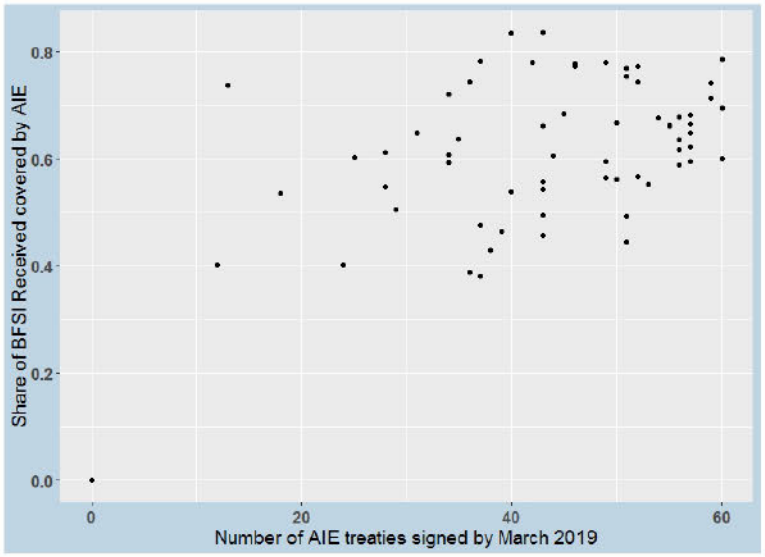
Source: Author

As can be seen from the previous graph, there is in deed a negative correlation between the values of Net BFSI and values of corporate tax rates of various jurisdictions, suggesting that the jurisdictions which score highly on the Net BFSI are less likely to have lower corporate tax rates. Low corporate tax rates where in the past on of main indicators of tax havens. Many economists in the past while defining the world "tax haven" used the low tax rate, such as Hampton (1996), Hines & Rice (1994) or Gravelle (2010). Therefore, it is logical that since countries with lower corporate tax rates are more attractive for potential investors, that the investors are likely to deposit there more assets then to the country with high corporate tax rate. So the country with low corporate tax rates is likely to have high BFSI Supplied, therefore higher Net BFSI, so it tent to benefit from the secrecy more.

5.4.4 Automatic Exchange of Information

Next, I would like to evaluate one of the most recent policy effort against tax havens the OECD's Automatic Exchange of Information (AIE), as described in detail in the Literature Review part. Focusing on analyzing, if jurisdictions while fighting against tax havens are properly targeting their most important secrecy jurisdictions, the Automatic Exchange of Information is nowadays possibly the best way how countries aim to lower the financial secrecy. The following figure shows the relationship between the number of AIE treaties signed by March 2019 and the share of the updated 2017's BFSI Received covered by AIE treaties for 77 countries out of 82 available, since taking into account only the countries which receives the secrecy from more then 10 jurisdictions (number of BFSI Received > 10).

Figure 5.11: Share of 2017's BFSI Received covered by AIE treaties vs. Number of AIE treaties signed by March 2019



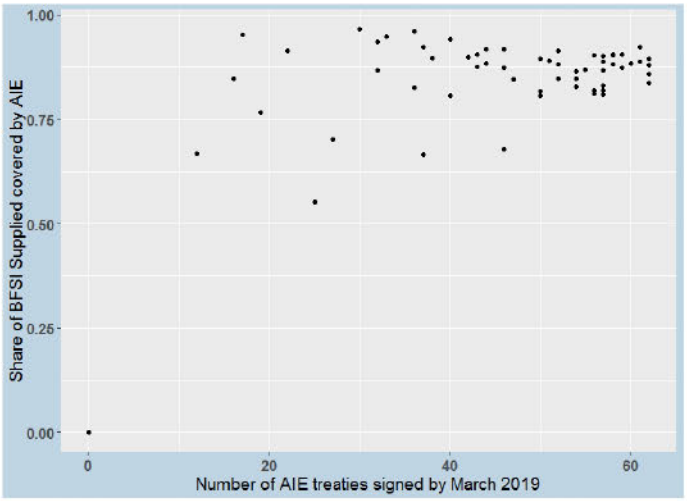
Source: Author

Out of the 77 countries presented in the graph, Bolivia, Kosovo, Albania, Macedonia, Egypt, Philippines, Mongolia, Bangladesh, Turkey, Kazakhstan, Thailand, South Korea have not signed any AIE treaties, they are represented by the dot in the left corner. As well as the United States which also did not concluded any AIE treaties, even though as can be seen from the Table 5.3 and 5.4, it supplied the most secrecy of all countries as well as received, the reason for that is that the US establish its own exchange information standard called FATCA as mentioned in more detail the Literature Review section. The

biggest progress concerning signing AIE treaties was made by Hong Kong. As mention by Janský, Meinzer & Palanský (2018) in their paper Hong Kong has signed only very few AIE treaties by January 4, 2018. Whereas nowadays according to the AIE data from March 2019 it has signed 38 of them. From the graph it can be seen that by March 2019 the majority of the countries has more than 50 AIE treaties signed and also more that 50% of secrecy received is covered by AIE treaty. The countries with the biggest number of AIE treaties signed on the receiving side are Latvia, Italy and Luxembourg, all of them have 60 AIE treaties signed with their secrecy suppliers, whereas their shares of BFSI Received covered by activated AIE treaties varies significantly, the difference is between two of them is almost 20%. While Latvia covers almost 80% of the financial secrecy received, Luxembourg covers only almost 62%. The question, why this significant difference between these two countries occurs, if it is because of Luxembourg's wrongly targeted policy against tax havens or is it on purpose, can be answered exactly with help of Net BFSI which is perfectly created this purpose, as presented later.

Generally, it is likely that some jurisdiction do not cover their most significant receivers of secrecy on purpose, which could be seen better from the graph regarding the relationship between the share of 2017's not BFSI Received but BFSI Supplied covered by AIE treaties by March 2019 and the number of AIE treaties signed, presented for 97 countries out of 111 available, since taking into account only the countries which supplies the secrecy to more then 10 jurisdictions (number of BFSI Supplied > 10).

Figure 5.12: Share of the 2017's BFSI Supplied covered by AIE treaties vs. Number of AIE treaties signed by March 2019



Source: Author

Out of 97 all 37 countries supplying the secrecy, including as already mentioned United States, does not have any AIE treaty signed. From the graph it can be seen that by March 2019 the majority of the countries has also more than 50 AIE treaties signed, but in case of secrecy supplied more that 75% is covered by AIE treaty. Overall there are also significant differences between the countries with the same amount of AIE treaties signed in March 2019. Such for example between Russia and Austria, which both have 50 AIE treaties concluded, but Austria covers them by almost 90% of secrecy received, whereas Russia only almost 81%. And even bigger difference is between Lithuania and Panama, which both concluded 37 treaties, but Lithuania covers by them almost 93% of secrecy supplied, whereas Panama by only almost 67%. The question is why they are so significant variations in the share of secrecy covered by AIE, and also if the governments of the various countries do the not target the jurisdictions from which they receive the most secrecy on purpose or by mistake. These questions I will also answer later by application of the Net BFSI.

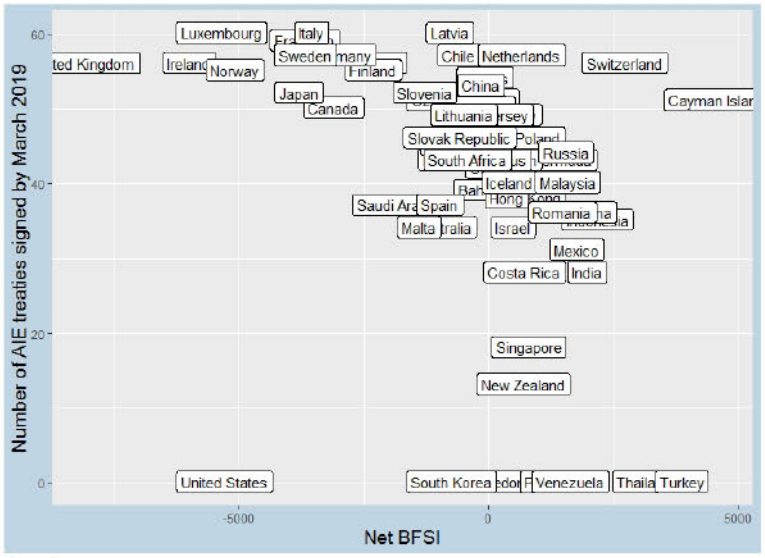
Now I would like to focus on evaluating the AIE policy effort by using solely my newly created Net Bilateral Financial Index. The Net BFSI is really advantageous for its policy application in form of AIE, since in the case of covering relationships between jurisdiction by treaties, it shows probably better than other indexes, if it is beneficial for the particular country to conclude AIE treaties generally. Since the value and most importantly the sign of the Net BFSI indicates if the particular country overall wins or loses due to secrecy. Logically, when the particular country wins due to secrecy, so its secrecy supplied outnumbers the secrecy received, or in other worlds the existence of secrecy is beneficial for the state, the country is generally likely to be less willing to sign the AIE treaties in order to keep benefiting from the global secrecy.

Therefore, the secrecy jurisdiction which benefits from the secrecy, so has a positive Net BFSI, will most likely try to have as little treaties concluded as possible with those countries which receives the secrecy from them. Most probably the greater amount of secrecy the SJ supply to the particular jurisdiction, the greater the effort of the SJ to not having treaty signed will be. So, the SJ will presumably try to never conclude the treaty or at least signing it as late as possible. These are the reasons why the secrecy jurisdictions are

likely to have the smaller percentage of signed treaties than the non-secrecy ones. On the contrary, for the jurisdiction which loses because of the secrecy, so has a negative Net BFSI, it is advantageous to sign as many treaties as possible to prevent any secrecy leaks, since it receives more secrecy that supplies. Therefore, probably the more secrecy the particular receive from a particular secrecy jurisdiction, the bigger effort to conclude a treaty with the particular secrecy jurisdiction is likely to be. So, the jurisdictions losing due to the secrecy most likely focus on trying to conclude the treaties with the secrecy jurisdiction which supply the most of the secrecy to them, since it might logically lead to investors not investing to the secrecy jurisdiction covered by treaty anymore as also Johannesen & Zucman (2014) mention it their article.

While applying the Net BFSI on this issue of Automatic Exchange of Information several finding can be made. In order to answer why there are significant difference in share of BFSI received covered by AIE treaties between countries with same number of treaties signed I created following graph:

Figure 5.13: The Net BFSI vs. Number of AIE treaties signed by March 2019 with secrecy suppliers of the countries



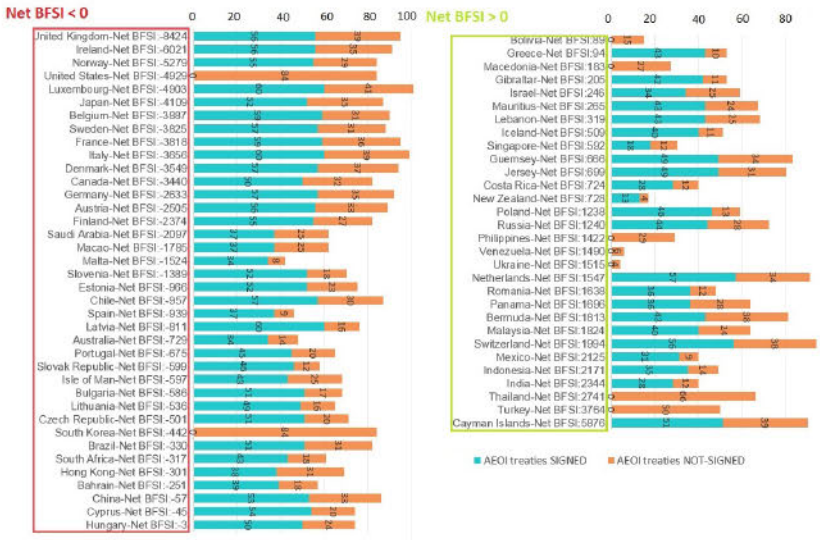
Source: Author

The figure above does not show only values of Net BFSI and number of treaties, but also the names of the countries for the majority of countries, even though negligible part overlaps. By looking at the graph, countries with the same number of AIE treaties are represented next to each other according to the Net BFSI. For instance, it can be seen that while United Kingdom and Switzerland obtains approximately the same number of AIE treaties, the val-

ues of Net BFSI of these two countries varies extremely. Another example are the three countries with 60 AIE treaties as mentioned earlier, the various values of Net BFSI for Luxembourg, Italy and Latvia are nice nicely presented in the graph above. More precisely, the Net BFSI of Latvia is approximately -780 and of Luxembourg -5354. So that Luxembourg looses because of secrecy significantly more, and since as previously mentioned it has covered on 62% of the secrecy received by AIE, it can be said that Luxembourg's government have bad anti-offshore policy, since even though it looses so much due it, the policy of the country is not targeting the right jurisdictions. On the other hand Latvia's government is doing a great job since it with 60 countries covered 80% in order to not loose due to secrecy that much.

Another indicator which could be also important is share of the relationships signed by the country, as also presented in the graph below, because while Latvia receives secrecy from 76 jurisdictions, whereas Luxembourg from 101, which is the largest number of all countries. So it could have not been solely because the Luxembourg's government not targeting the countries well, but also partially the fact that Luxembourg have more countries to cover. But for Luxembourg as well as for other countries with the same problem, my analysis could these countries give a clue while determining where to concentrate their policymakers' efforts next, since I have discovered that Luxembourg has not covered five from its top ten suppliers of the secrecy by AIE treaties.

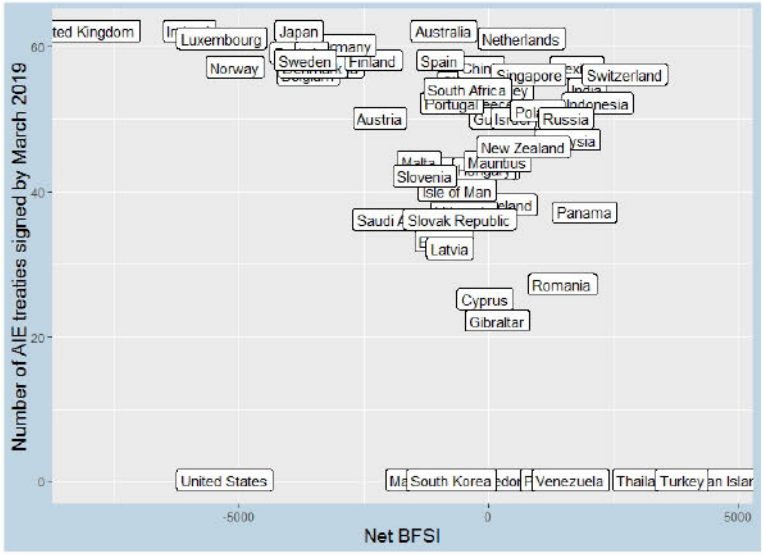
Figure 5.14: The Net BFSI and the number of AIE treaties signed/not signed



Source: Author

In order to also answer why among countries with the same numbers of AIE treaties signed exist so significant differences in shares of also the secrecy supplied covered by AIE, as well as to answer if governments tend to not target the largest receivers of the secrecy on purpose in order to benefit from it, I have created following graph:

Figure 5.15: The Net BFSI vs. Number of AIE treaties signed by March 2019 with secrecy receivers of the countries

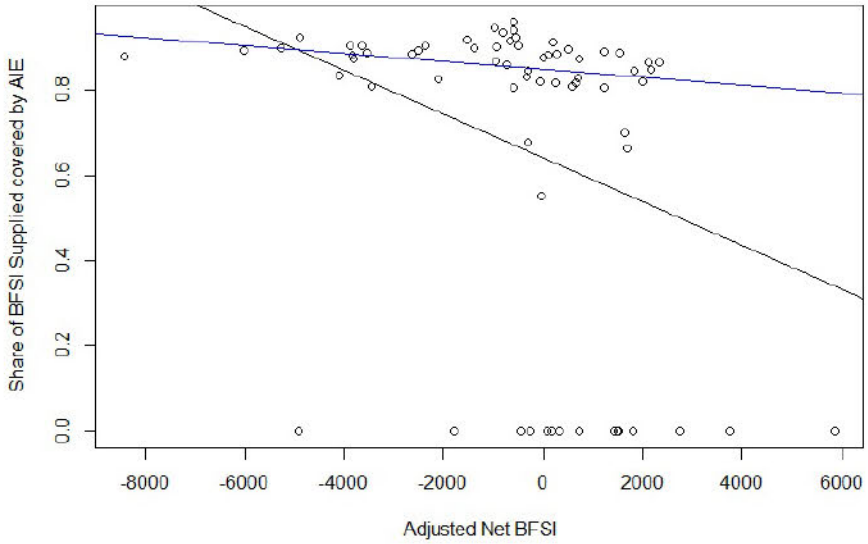


Source: Author

From the table above many findings can be concluded, for instance, that even though United Kingdom as well as Japan or Australia have approximately the same number of AIE treaties signed by its receivers of the secrecy, its Net BFSI values differs significantly. Also as mentioned before, Russia and Panama have noticeably higher share of secrecy supplied covered by AIE than Austria, Lithuania while having the same number of AIE treaties. Both Russia and Panama have one more thing in common, as can be seen from the graph, which is that both have positive Net BFSI (Russia= 1546, Panama= 1918), so both are benefiting significantly from secrecy. Logical since Panama is often perceived as tax havens. Whereas the countries with significantly higher share of secrecy supplied covered by AIE, both have negative Net BFSI (Austria= -2184, Lithuania= -500), so are both losing because of the secrecy. From which it can be deduced that Russia and Panama did not signed the important treaties on purpose, since they do not want to benefit less from the secrecy. So as presented on these two examples, the Net BFSI have really the power to indicate if some jurisdiction avoid signing treaties on purpose or unintentionally.

Subsequently to address this issue more formally I analyse the relationship between the share of supplied secrecy covered by active AIE treaties and Net BFSI. But firstly in order to prevent potential endogeneity of SS, and thus Net BFSI, I needed to adjust the SS which I am using for creation of Net BFSI in order not to contain the KFSI concerning AIE, as described in the methodology section. The following graph shows the relationship between Adjusted Net BFSI and share of BFSI supplied covered by AIE for 66 countries for which the BFSI is estimated for at least 10 counter-party jurisdictions:

Figure 5.16: Relationship between the adjusted Net BFSI and the share of BFSI Supplied covered by activated AIE treaties by March 2019



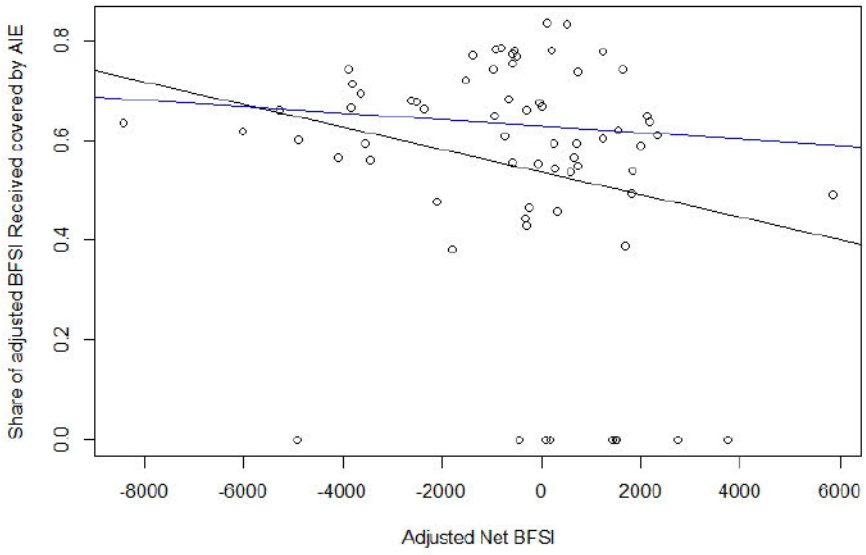
Source: Author

I have observed a negative correlation between the share of supplied secrecy covered by AIE treaties from March 2019 and the Adjusted Net BFSI value, which implicates that countries which benefits more from the secrecy tends to have the secrecy supplied less covered by AIE treaties. Which also suggests that countries with higher Net BFSI value are less likely to activate AIE relationships with jurisdictions which are important places for their secrecy. The negative correlation occurred even with the condition of country having at least one AIE covered, as can be shown by the blue abline. Generally, out of all countries for which I was able to calculate Net BFSI, 15 of them does not have any AIE treaty signed by March 2019, from which precisely 11 countries, so

the majority, indeed have a positive Net BFSI, so overall wins due to secrecy, which as well supports the previous statement.

Next, I also analyse the relationship between the share of received secrecy covered by active AIE treaties and also adjusted Net BFSI to prevent endogenity. The following graph shows the relationship between Adjusted Net BFSI and share of BFSI received covered by AIE for 66 countries for which the BFSI is estimated for at least 10 counter-party jurisdictions:

Figure 5.17: Relationship between the adjusted Net BFSI and the share of BFSI Supplied covered by activated AIE treaties by March 2019



Source: Author

Also in this case I have observed a negative correlation between the share of supplied secrecy covered by AIE treaties from March 2019 and the Adjusted Net BFSI value, even though less negative than the previous one. This correlation implicates that countries which benefits more from the secrecy tends to have the secrecy received less covered by AIE treaties. The negative correlation occurred even with the condition of country having at least one AIE covered, as can be shown by the blue abline. This correlation also implies that countries with higher Net BFSI value are less likely to activate AIE relationships with jurisdictions from which they receive secrecy. This statement does

not sound beneficial for the Net Suppliers, since the less secrecy received they will have covered by AIE, the more secrecy they are likely to receive, so the more investors will deposit their assets offshore. Even though, this correlation primarily on the contrary also suggests that countries with lower Net BFSI are more likely to active AIE relationships with jurisdictions from which they receive the secrecy. Which is logical since Net Receivers does not want to loose due to secrecy that much, so they tries to cover as many countries with AIE treaties as possible.

Subsequently, I also evaluated the engagement of the 10 countries which benefits from the secrecy the most in the Automatic Exchange of Information by March 2019, for which purpose I created following table. The table presents for the top 10 Net Suppliers number of AIE treaties with both suppliers and receivers, as well as the share of relationships covered by AIE with country's suppliers and receivers and also the share of BFSI both Received and Supplied covered by AIE treaties.

Table 5.11: Top 10 Net Suppliers and their engagement in AIE policy effort

Jurisdiction	NetBFSI	AIE treaties with suppliers	% relation -ships with suppliers covered by AIE	% BFSI Received covered by AIE	AIE treaties with receivers	% relation -ships with receivers covered by AIE	% BFSI Supplied covered by AIE
Cayman Islands	4654.86757	51	57%	49%	0	0%	0%
Turkey	3865.91945	0	0%	0%	0	0%	0%
Thailand	3119.80766	0	0%	0%	0	0%	0%
Switzerland	2718.41374	56	60%	59%	56	77%	82%
Indonesia	2180.31248	35	71%	64%	52	88%	85%
India	1970.16775	28	70%	61%	54	84%	86%
Panama	1918.74775	36	56%	39%	37	67%	66%
Mexico	1764.09347	31	78%	65%	57	86%	87%
Ukraine	1635.27524	0	0%	0%	0	0%	0%
Venezuela	1633.96807	0	0%	0%	0	0%	0%

Source: Author

All three countries which are benefiting the most from secrecy, Cayman Islands, Turkey as well as Thailand, does not concluded any AIE treaty. It is hardly to be a coincidence, which confirms also the validity of newly created Net BFSI and supports the previous findings. An interesting fact also is that Cayman Islands have according the the Automatic Exchange Portal the treaties concluded for 51 countries, whereas no country have concluded the treaty with Cayman Islands (OECD 2019b). This can perfectly be the reason why according to my results Cayman Islands are winning the most out of all

secrecy jurisdiction thanks to secrecy, since the secrecy which Cayman Islands are supplying to the world is not covered by any AIE treaty, but all the secrecy received is covered by almost 57%. Which means that if an investor from some country deposits an asset to Cayman Islands, Cayman Islands do not to have to automatically exchange this information, but if an investor from Cayman Island invests in one of the 51 countries, Cayman Island will automatically receive this information, so Cayman Islands are wining in both cases. All this being said validates the correctness of the Net BFSI, more precisely the fact of Cayman Islands being the country which wins due to secrecy the most. Looking further at the table also Ukraine and Venezuela have not concluded any AIE treaty, and generally about the 5 countries which concluded AIE treaty could be said that they have larger share of BFSI Supplied covered by AIE than the share of BFSI Received, which is for country benefiting from secrecy not logical, and could be also caused by the lack of data. Also they overall have the share of BFSI Supplied covered by AIE treaties unexpectedly high regarding to the fact of being perceived as tax havens.

The following graph, similarly to the previous one, evaluates the engagement of the 10 countries the least benefiting from secrecy in the Automatic Exchange of Information by March 2019 using same variables as in previous case.

Table 5.12: Top 10 Net Receivers and their engagement in AIE policy effort

Jurisdiction	NetBFSI	AIE treaties with suppliers	% relation -ships with suppliers covered by AIE	% BFSI Received covered by AIE	AIE treaties with receivers	% relation -ships with receivers covered by AIE	% BFSI Supplied covered by AIE
United Kingdom	-8113,9848	56	59%	64%	62	81%	88%
Ireland	-5995,08418	56	62%	62%	62	85%	89%
Luxembourg	-5354,07717	60	59%	60%	61	85%	92%
United States	-5292,66875	0	0%	0%	0	0%	0%
Norway	-5085,50198	55	65%	66%	57	89%	90%
France	-3831,38532	59	62%	71%	59	79%	87%
Japan	-3801,04308	52	60%	57%	62	85%	84%
Sweden	-3676,49168	57	65%	67%	58	82%	88%
Belgium	-3621,74137	59	66%	74%	56	82%	90%
Italy	-3551,14881	60	61%	70%	59	83%	90%

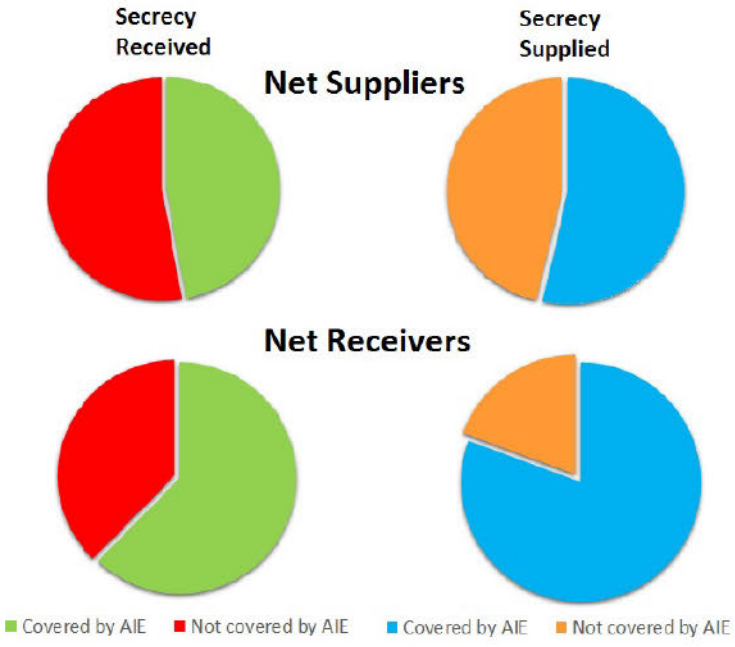
Source: Author

From the table it can be seen that except the United States which does not automatically exchange information at all, all of the top 10 countries losing the most due to secrecy have covered the its secrecy supplied by AIE treaties extensively, more precisely the have covered around 90% of the BFSI Supplied

by AIE treaties. Whereas their coverage of BFSI Received by AIE treaties is not that significant, it is only around 60%, which could be the reason why these country looses because of the secrecy the most. Since these countries, as can be also seen from the table, are automatically exchanging information only with about 60% of jurisdictions to which investors from their countries invest to.

Overall, the tendency of BFSI Receivers and BFSI Suppliers can be seen from the following pie charts, where I conclude how much of BFSI Received and BFSI Supplied does on average Net Receivers and Net Supplies covers by AIE.

Figure 5.18: Net Receivers, Net Suppliers and their average coverage of secrecy received and supplied by AIE



Source: Author

On average the countries loosing because of the secrecy covers the secrecy supplied by 81%, whereas countries winning due to secrecy covers only 54%, so they cover almost 30% of the secrecy less, which is significant number indicating that overall, as several times mentioned, on average the Net Suppliers try to avoid intentionally signing the AIE treaties as compared to Net Receivers. Also the secrecy received covers by AIE treaties better on average the Net Receivers (47%), then the Net Suppliers (62%), suggesting that the Net Suppliers tries to avoid automatically exchanging information generally.

Chapter 6

Conclusion

The issue of tax havens has been of increasingly great importance to majority of governments and international organizations. My thesis gives new insights in analysing financial secrecy. It goes in depth while describing the fight against financial secrecy and focuses on analysing the two concepts very advantageous for combating financial secrecy, the FSI (Cobham, Janský & Meinzer 2015) and primarily the BFSI (Janský, Meinzer & Palanský 2018). My thesis extends the research of Janský, Meinzer & Palanský (2018), since it in depth works with the Bilateral Financial Secrecy Index, updates it, explains the logic behind it and on it basis concludes several findings which ale likely to lead to better understanding and wider application of this established index. So that it could be more beneficial for anti-offshore policies around the world.

From the results of my thesis it is be able to recognize not only how much the particular tax haven is used by the entities from other countries, but also how much the entities from particular tax haven use on contrary the other jurisdiction as a tax haven, by establishing BFSI Received and BFSI Supplied. For instance, I discovered that while investors deposited to Hong Kong only 1% of all the global cross-border portfolio assets and to German almost 5%, still Hong Kong generally supplied more global secrecy in 2017 than German, because of the different secrecy levels of those countries. Also I concluded that the EU receives almost twice as much secrecy than it supplies, and also that the region which supply secrecy significantly more than receive is Latin America and Caribbean. By canceling out the bilateral usage of the secrecy jurisdiction I developed the Net Financial Bilateral Index which much more precisely indicate how truly harmful the particular jurisdiction to its surrounding world is.

Subsequently, one of my main aims was working with the results of Net BFSI, to really see the purpose of creating it and the idea behind it. And then with the respect to the presented results I made some statements, which help the usage of this index for various purposes. Primarily, it will help both global and governmental policies to indicate which country truly wins and looses due to the secrecy. So the Net BFSI can help international policy makers in tackling the tax haven issue, since it can show on which secrecy jurisdiction they should focus on. Even if the particular countries could claim differently, this index shows at least and hopefully an important incentives to think about the countries benefiting the most from secrecy differently. According to the Net BFSI the five jurisdictions which wins due to secrecy the most are: Cayman Islands, Turkey, Thailand, Switzerland and Indonesia, and the five jurisdiction which loose because of the financial secrecy are: United Kingdom, Ireland, Luxembourg, Unites States and Norway. Generally being said among 15 the countries benefiting the most due to secrecy 7 are from Asia, while among the 15 countries benefiting due to secrecy the least are 12 from Europe.

Next, I analyzed the changes of Net BFSI during the recent decade and I discovered that for example for the majority of EU countries the tendency of diminishing of the Net BFSI prevailed, the Germany losses because of secrecy three times more that decade ago, whereas Cyprus experience the biggest increase in the EU, although globally the biggest deference in Net BFSI values between 2008 and 2017 experienced Singapore, which started to benefit from secrecy. In general during the recent decade the Net BFSI of Net Receivers tend to decrease even more, conversely the Net BFSI of Net Supplies tend to increase. Which can indicate that the policies of the countries losing due to secrecy were not aiming to make their tax systems more internationally harmful and more advantageous for the investors, meanwhile the policies of jurisdiction winning due to secrecy more likely targeted not to make their harmful tax havens closer to international standards, but on the other hand more attractive for offshore investors. I also found out that the significant majority of countries winning because of secrecy are high-income economies, UNCTAD members as well as OECD members, and on the contrary the majority of countries which looses due to secrecy are middle-income economies, Non-OECD members as well as Non-UNCTAD members. I also worked with corporate tax rates and find out that the jurisdiction which are winning more due to secrecy tend to have lower tax rates, which are historically one of indicators of tax havens.

One of my main aims was to contribute to the tax haven's literature by evaluating the EU policies as well as global policies. Firstly, I assessed the EU list of non-cooperative tax jurisdictions using specialized Net BFSI adjusted for EU member states, the for comparison I also assessed the global lists of tax havens using the original Net BFSI. Thanks to process of creating of the EU list of non-cooperative tax jurisdictions, the EU established an international framework for communication and cooperation with the EU's tax associates for discussing the tax issues. I hope that my thesis can help this also this framework, since they could also possibly discuss with their partners which country wins and which looses because of the secrecy and my thesis could give them not only the idea about it but also most importantly the numbers. Therefore also at least in this way, it could help the process of ameliorating the international standard of tax systems globally. As well it could contribute to making the benefits of secrecy more balanced across the countries and more likely to be decreased in the case of the top Net Suppliers for EU member states. Since it can also make the European Commission to specialise its policies more precisely and enlarge the cooperation primarily with those countries which wins due to secrecy connected to EU countries the most, but which EU does not include in their lists, such as Unite States, Singapore, Indonesia, Russia and Mexico. In order to make the EU better off, not losing so significantly due to secrecy as presented in the Results section of my thesis.

Since my results were generally in compliance with the EU list of tax havens, and the European Commission has in deed supervised 10 out of 15 most secrecy benefiting jurisdictions and tried to make them comply with the international standards, it is not the EU list of tax havens nor the EU process of listing which would according to my research primarily need improvement as much as the global lists of tax havens. Although certain renowned economists made some quality lists of tax havens accompanied with a great methodology, still an occasional actualization of these lists would be convenient, as well as involving more indicators or also taking into account the fact how various jurisdictions wins or loses due to financial secrecy in order to make the lists of tax havens as great as possible. Since according to my research the global lists of tax havens by Hines (2010) and Johannesen & Zucman (2014) did not reflected remarkably the fact how much or even if their "tax havens" do generally benefit from the secrecy.

The global financial crisis made governments secure public revenues and deal

with the international tax evasion as well as the bank secrecy by sharing tax information for tax purposes. But the recent offshore data leaks showed that, they were not sufficient. Therefore, world leaders implemented in 2017 even better system of national cooperation, the Automatic Exchange of Information, so that countries could share information about bank accounts and financial investment automatically, but unfortunately not all countries throughout the world have implemented it. In the economic literature there are numerous evaluations of the Tax Haven Crackdown (Johannesen & Zucman 2014; Shaxson & Christensen 2011; Elsayyad & Konrad 2012), and fewer of them are concerning the recent AIE policy (Janský, Meinzer & Palanský (2018); Hakelberg & Schaub (2017)). That is why, secondly, in my thesis I evaluated this most contemporary policy measure against tax havens, using the newly created Net BFSI. I found that by March 2019 definitely not all the main secrecy jurisdictions benefiting the most from secrecy, such as for instance Cayman Islands, indeed concluded any AIE treaties. I also mainly discovered that the countries more winning due to secrecy are the less likely to have covered its secrecy supplied by AIE treaties. On the contrary, I also suggest in my thesis that the countries loosing due to secrecy are more likely to have its secrecy received more covered by AIE treaties. I conclude also that Net BFSI indicates if the jurisdiction do not cover its secrecy supplied by AIE treaties on purpose or unintentionally, since I discovered that for instance both Lithuania and Panama concluded 37 AIE treaties, but Lithuania covered 93% of secrecy supplied by AIE treaties whereas Panama only 67% and according to the Net BFSI Lithuania looses due to secrecy, whereas Panama significantly wins due to the global secrecy, which indicates that Panama does not covered its secrecy supplied on purpose, in order to keep benefiting from it. Next, I evaluated the engagement of both top 10 Net Receivers and Net Supplies in the AIE policy efforts, and also, for instance, I concluded that on average the Net Receivers have covered its secrecy supplied by 80% whereas, the Net Supplies by 54%.

In conclusion, I hope that my thesis concerning the Net BFSI, covered successfully the topic of tax havens and financial secrecy and the fight against them, deeply analysed it, and provided several important findings that contributed to the anti-offshore literature as well as being a stepping stone for potential further research.

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Appendix A

Appendix

Table A1 - List of EU list of non-cooperative tax jurisdictions

EU greylist 03/2019	EU blacklist 03/2019	**Delisted from 12/2018 greylist**	EU greylist 12/2018	EU greylist 12/2018	EU blacklist 12/2018
Albania	American Samoa	Andorra	Albania	Marshall Islands	American Samoa
Anguilla	Guam	Bahrain	Anguilla	Mauritius	Guam
Antigua and Barbuda	Samoa	Faroe Islands	Antigua and Barbuda	Mongolia	Samoa
Armenia	Trinidad and Tobago	Greenland	Armenia	Montenegro	Trinidad and Tobago
Australia	US Virgin Islands	Grenada	Aruba	Morocco	US Virgin Islands
Bahamas	Barbados	Guernsey	Bahamas	Namibia	
Bosnia and Herzegovina	United Arab Emirates	HongKong	Bahrain	Nauru	
Botswana	Marshall Islands	Isle of Man	Barbados	New Caledonia	
British Virgin Islands	Aruba	Jamaica	Belize	Niue	
Cape Verde	Belize	Jersey	Bermuda	Oman	
Costa Rica	Bermuda	Korea	Bosnia and Herzegovina	Palau	
Curacao	Fiji	Liechtenstein	Botswana	Panama	
Cayman Islands	Oman	Macao SAR	British Virgin Islands	Peru	
Cook Islands	Vanuatu	Malaysia	Cape Verde	Qatar	
Eswatini	Dominica	Montserrat	Cayman Islands	Serbia	
Jordan		New Caledonia	Cook Islands	Seychelles	
Maldives		Panama	Curacao	South Korea	
Mauritius		Peru	Dominica	St. Kitts and Nevis	
Morocco		Qatar	Faroe Islands	St. Lucia	
Mongolia		SanMarino	Fiji	St. Vincent+Grenadines	
Montenegro		St. Vincent+Grenadines	Greenland	Swaziland	
Namibia		Taiwan	Grenada	Switzerland	
North Macedonia		Tunisia	Guernsey	Taiwan	
Nauru		Turks and Caicos	Hong Kong	Thailand	
Niue		Uruguay	Isle of Man	Tunisia	
Palau			Jamaica	Turkey	
St. Kitts and Nevis			Jersey	Turks and Caicos Islands	
St. Lucia			Jordan	United Arab Emirates	
Serbia			Labuan Island	Uruguay	
Seychelles			Liechtenstein	Vanuatu	
Switzerland			Macao	Vietnam	
Thailand			Macedonia		
Turkey			Malaysia		
Vietnam			Maldives		

Source: European Commission (2019a)

Table A2 - Full list of Regions of the world including all the countries as classified from the World Bank's organization

EAST ASIA AND PACIFIC	EUROPE AND CENTRAL ASIA	LATIN AMERICA AND CARIBBEAN	MIDDLE EAST + NORTH AFRICA	NORTH AMERICA	SOUTH ASIA	SUB-SAHARAN AFRICA
American Samoa	Albania	Anguilla	Algeria	Bermuda	Afghanistan	Angola
Australia	Andorra	Antigua And Barbuda	Bahrain	Canada	Bangladesh	Benin
Brunei Darussalam	Armenia	Argentina	Djibouti	United States	Bhutan	Botswana
Cambodia	Austria	Aruba	Egypt, Arab Rep.		India	Burkina Faso
China	Azerbaijan	Bahamas, The	Iran, Islamic Rep.		Maldives	Burundi
Cook Islands	Belarus	Barbados	Iraq		Nepal	Cabo Verde
Fiji	Belgium	Belize	Israel		Pakistan	Cameroon
French Polynesia	Bosnia And Herzegovina	Bolivia	Jordan		Sri Lanka	Central African Republic
Guam	Bulgaria	Brazil	Kuwait		São Tomé And Principe	Chad
Hong Kong SAR, China	Croatia	British Virgin Islands	Lebanon			Comoros
Indonesia	Cyprus	Cayman Islands	Libya			Congo, Dem. Rep.
Japan	Czech Republic	Chile	Malta			Congo, Rep.
Kiribati	Denmark	Colombia	Morocco			Côte D'Ivoire
Korea, Dem. People's Rep.	Estonia	Costa Rica	Oman			Equatorial Guinea
Korea, Rep.	Faroe Islands	Cuba	Qatar			Eritrea
Lao PDR	Finland	Curaçao	Saudi Arabia			Eswatini
Macao SAR, China	France	Dominica	Syrian Arab Republic			Ethiopia
Malaysia	Georgia	Dominican Republic	Tunisia			Gabon
Marshall Islands	Germany	Ecuador	United Arab Emirates			Gambia, The
Micronesia, Fed. Sts.	Gibraltar	El Salvador	West Bank And Gaza			Ghana
Mongolia	Greece	Grenada	Yemen, Rep.			Guinea
Myanmar	Greenland	Guatemala				Guinea-Bissau
Nauru	Hungary	Guyana				Kenya
New Caledonia	Iceland	Haiti				Lesotho
New Zealand	Ireland	Honduras				Liberia
Niue	Isle Of Man	Jamaica				Madagascar
Northern Mariana Islands	Italy	Martinique				Malawi
Palau	Kazakhstan	Mexico				Mali
Papua New Guinea	Kosovo	Montserrat				Mauritania
Philippines	Kyrgyz Republic	Nicaragua				Mauritius
Samoa	Latvia	Panama				Mozambique
Singapore	Liechtenstein	Paraguay				Namibia
Solomon Islands	Lithuania	Peru				Niger
Taiwan, China	Luxembourg	Puerto Rico				Nigeria
Thailand	Macedonia, FYR	Sint Maarten (Dutch Part)				Rwanda
Timor-Leste	Moldova	St. Kitts And Nevis				Senegal
Tonga	Monaco	St. Lucia				Seychelles
Tuvalu	Montenegro	St. Martin (French Part)				Sierra Leone
Vanuatu	Netherlands	St. Vincent And The Grenadines				Somalia
Vietnam	Norway	Suriname				South Africa
	Poland	Trinidad And Tobago				South Sudan
	Portugal	Turks And Caicos Islands				Sudan
	Romania	Uruguay				Tanzania
	Russian Federation	Venezuela, RB				Togo
	San Marino	Virgin Islands (U.S.)				Uganda
	Serbia					Zambia
	Slovak Republic					Zimbabwe
	Slovenia					
	Spain					
	Sweden					
	Switzerland					
	Tajikistan					
	Turkey					
	Turkmenistan					
	Ukraine					
	United Kingdom					
	Uzbekistan					

Source: World Bank's organization web page

Table A3 - List of 52 tax havens by Johannesen and Zucman (2014)

Andorra	Sint Maarten	Marshall Islands
Gibraltar	Barbados	Uruguay
Niue	Liberia	Costa Rica
Anguilla	St. Kitts and Nevis	Monaco
Grenada	Belgium	US Virgin Islands
Panama	Liechtenstein	Curacao
Antigua and Barbuda	St. Lucia	Montserrat
Guernsey	Belize	Vanuatu
Samoa	Luxembourg	Cyprus
Aruba	St. Vincent and the Grenadines	Nauru
Hong Kong SAR	Bermuda	Dominica
San Marino	Macao SAR	Netherlands Antilles
Austria	Switzerland	
Chile	British Virgin Islands	
Seychelles	Malaysia	
Bahamas	Trinidad and Tobago	
Isle of Man	Cayman Islands	
Singapore	Malta	
Bahrain	Turks and Caicos Islands	
Jersey	Cook Islands	

Source: Johannesen and Zucman (2014)

Table A4 - List of 52 tax havens by Hines (2010)

Andorra	Ireland	Samoa
Anguilla	Isle of Man	San Marino
Antigua and Barbuda	Jersey	Seychelles
Aruba	Jordan	Singapore
Bahamas	Lebanon	Sint Maarten
Bahrain	Liberia	St. Kitts and Nevis
Barbados	Liechtenstein	St. Lucia
Belize	Luxembourg	St. Vincent and the Grenadines
Bermuda	Macao	Switzerland
British Virgin Islands	Maldives	Tonga
Cayman Islands	Malta	Turks and Caicos Islands
Cook Islands	Marshall Islands	Vanuatu
Costa Rica	Mauritius	
Cyprus	Micronesia	
Djibouti	Monaco	
Dominica	Montserrat	
Gibraltar	Nauru	
Grenada	Netherlands Antilles	
Guernsey	Niue	
Hong Kong	Panama	

Source: Hines (2010)