

**Charles University in Prague**

Faculty of Social Sciences  
Institute of Economic Studies



BACHELOR THESIS

**Treasure Islands**

The Economic Analysis of Tax Havens

Author: **Ondřej Filip**

Supervisor: **Petr Janský, M.Sc.**

Academic Year: **2012/2013**

## **Declaration of Authorship**

The author hereby declares that he compiled this thesis independently, using only the listed resources and literature. The author also declares that he has not used this thesis to acquire another academic degree.

The author grants to Charles University permission to reproduce and to distribute copies of this thesis document in whole or in part.

Prague, May 16, 2013

---

Signature

## **Acknowledgments**

I am grateful especially to Petr Janský, M.Sc. for his valuable comments and keen suggestions. I would like to thank to PhDr. Tomáš Havránek for his great L<sup>A</sup>T<sub>E</sub>X template. A very special gratitude belongs to my mum.

## Bibliographic entry

FILIP, O. (2013): “Treasure Islands: The Economic Analysis of Tax Havens.” (*Unpublished bachelor thesis*). Charles University in Prague. Supervisor: Petr Janský, M.Sc.

**Length:** 64 036 characters

## Abstract

This thesis strives to introduce a wider notion of tax havens. We alter a traditional paradigm by investigating tax havens' influence on economic performance of other countries. The first part of the thesis copes with issues implied by the absence of a suitable tax haven's definition which results in compiling an inclusive list of havens. Subsequently, we present a data-based description of the identified tax havens with an emphasis on several widely-held assertions. The second part delivers an empirical analysis. It illustrates the role of tax havens as financial intermediaries. We examined whether the volumes of capital flows between non-havens and tax havens correspond to the sizes of the counterpart economies and to their mutual distance. Foremost, we found intensified capital flows between tax havens and large non-haven countries in their close proximity. The thesis concludes by a discussion of results.

**JEL Classification** E22, F02, F21, H29,

**Keywords** Tax Haven, Secrecy Jurisdiction, Offshore Financial Center, Portfolio Investment, Foreign Direct Investment, Distance, Financial Secrecy, Gross Domestic Product

**Author's e-mail** ofilip38@gmail.com

**Supervisor's e-mail** jansky.peta@gmail.com

## Abstrakt

Tato práce představuje širší pojetí daňových rájů. Za účelem rozšíření tradičního paradigmatu zkoumá vliv existence daňových rájů na ekonomickou aktivitu v ostatních zemích. V první části práce se věnujeme otázkám v souvislosti s

neexistencí vhodné definice daňového ráje a jako výsledek přinášíme vlastní seznam rájů. Následně zpracováváme popisnou analýzu námi identifikovaných daňových rájů se zvláštním důrazem na některá rozšířená tvrzení. Druhá část práce je věnována empirické analýze. Nejdříve ilustrujeme roli daňových rájů jako finančních zprostředkovatelů. Poté zkoumáme závislost objemů kapitálových toků mezi daňovými ráji a ostatními zeměmi na velikostech zúčastněných ekonomik a na jejich vzájemné vzdálenosti. Nalezli jsme intenzivnější kapitálové toky mezi daňovými ráji a velkými zeměmi v jejich blízkosti. Práce je zakončena diskuzí výsledků.

**Klasifikace JEL**

E22, F02, F21, H29,

**Klíčová slova**

Daňový ráj, Secrecy Jurisdiction, Off-shore Financial Center, portfoliové investice, přímé zahraniční investice, vzdálenost, bankovní tajemství, hrubý domácí produkt

**E-mail autora**

ofilip38@gmail.com

**E-mail vedoucího práce**

jansky.peta@gmail.com

# Contents

List of Tables	vii
Acronyms	viii
<b>1 Introduction</b>	<b>1</b>
<b>2 On Search for Tax Havens</b>	<b>3</b>
2.1 What Defines a Tax Haven? . . . . .	3
2.2 Identified Tax Havens . . . . .	10
2.3 Descriptive Analysis . . . . .	15
<b>3 Empirical Analysis</b>	<b>21</b>
3.1 International Capital Flows . . . . .	21
3.2 Data Description . . . . .	24
3.3 Model Specification . . . . .	26
3.4 Estimation Results . . . . .	28
3.4.1 Capital Flows to Tax Havens . . . . .	28
3.4.2 Capital Flows from Tax Havens . . . . .	32
3.4.3 Capital Flows within Tax Haven and Non-Haven Pairs . . . . .	34
3.4.4 Discussion of Results . . . . .	38
<b>4 Conclusion</b>	<b>42</b>
<b>Bibliography</b>	<b>49</b>
<b>A Tables</b>	<b>I</b>
<b>Thesis Proposal</b>	<b>IX</b>

# List of Tables

2.1	Summary of Island Tax Havens . . . . .	16
2.2	Average GDP in Tax Havens 1992 - 2011 . . . . .	17
2.3	Comparison of Average GDP Growth Rates . . . . .	19
2.4	List of Tax Havens . . . . .	20
3.1	Portfolio Investment Holdings of Tax Havens . . . . .	22
3.2	Inward and Outward FDI Top 10 . . . . .	24
3.3	Portfolio Investment in Tax Havens . . . . .	30
3.4	Foreign Direct Investment in Tax Havens . . . . .	31
3.5	Portfolio Investment from Tax Havens . . . . .	32
3.6	Foreign Direct Investment from Tax Havens . . . . .	33
3.7	Potrtfolio Investment - Haven and Non-Haven Pairs . . . . .	34
3.8	Foreign Direct Investment - Haven and Non-Haven Pairs . . . . .	35
3.9	The Effect of Geographical Distance . . . . .	36
3.10	Portfolio Investment within Pairs . . . . .	37
3.11	Foreign Direct Investment within Pairs . . . . .	37
A.1	Covered Lists of Tax Havens . . . . .	I
A.2	Shapiro - Wilk Test for Normality . . . . .	I
A.3	Tax Havens - Number of Listings . . . . .	II
A.4	Secrecy Scores . . . . .	III
A.5	Correlation Matrix . . . . .	IV
A.6	List of Island Havens . . . . .	IV
A.7	Inbound Portfolio Investment . . . . .	V
A.8	Outbound Portfolio Investment . . . . .	VI
A.9	Summary Statistics I . . . . .	VII
A.10	Summary Statistics II . . . . .	VIII

# Acronyms

<b>GDP</b>	Gross Domestic Product
<b>FDI</b>	Foreign Direct Investment
<b>TJN</b>	Tax Justice Network
<b>IMF</b>	International Monetary Fund
<b>WDI</b>	World Development Indicators
<b>OLS</b>	Ordinary Least Squares
<b>OECD</b>	Organization for Economic Cooperation and Development
<b>OFC</b>	Offshore Financial Center
<b>FSI</b>	Financial Secrecy Index
<b>GAO</b>	United States Government Accountability Office
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>CPIS</b>	Coordinated Portfolio Investment Survey
<b>CDIS</b>	Coordinated Direct Investment Survey
<b>CIA</b>	Central Intelligence Agency



# Chapter 1

## Introduction

In the public perception, *Tax Havens* evolved into a widespread phenomenon. Although these are not entirely clear, tax havens evoke various reactions. While some are based rather on a charm of the unknown, others employ quantitative tools in order to deal with specific issues. Generally speaking, tax havens are countries which try to appeal to a specific target. Their intention is to attract various kinds of economic activity as well as other sources of funds from abroad. On one hand, it is not something that should be considered a deviation from a standard of conduct. On the other hand, there is hardly any clear boundary distinguishing a norm of decent practice from a questionable attitude in this context. This is tentatively where the issue of tax havens originates from.

Over the last century, particular countries, territories, special administrative regions and other jurisdictions have developed a broad variety of approaches in an effort to draw the attention of foreign investors (Palan *et al.*, 2009). Over the course of time, tax havens have attracted not only the desired attention of financiers and wealthy investors, but also of those who keep questioning the desirability of their existence. Although posed repeatedly, this question is still far from being answered sufficiently. Therefore, this area offers an opportunity of conducting a further research. On a closer examination, the issue becomes more challenging since the whole story has always taken place behind the veil of secrecy.

It is not unlikely that tax havens influence other—non-haven—countries in some particular way. In general, one encounters two conflicting viewpoints. On one hand, the existence of tax havens raises a number of concerns ranging from complex tax issues and mispricing techniques to large-scale investment transactions of multinational companies. On top of that, some voices warn against money laundering, corruption affairs, and other kinds of illicit activity.

These issues are treated for instance by Oxfam (2000); Christian Aid (2009); Palan *et al.* (2009); FSI (2011), or Shaxson (2012). On the other hand, however, tax havens might affect non-haven countries positively. Thanks to being intermediaries of large international capital flows, tax havens may contribute to promoting economic activity elsewhere. While exhibiting an above-average economic growth (Hines, 2010) tax havens might be able to spread positive spillover to other countries. Blanco & Rogers (2011) agree with this view while stressing the importance of geographical proximity. In a similar manner, Rose & Spiegel (2007) argue that the presence of a neighboring tax haven country significantly enhances the competition in the domestic financial sector. The authors associate closer distance to a tax haven with a relatively lower interest rate spread. Furthermore, it is argued that tax havens may facilitate investment to high-tax countries by reducing the costs of entering their markets (Desai *et al.*, 2006a). These and similar questions are central to the focus of this work.

The objective of this thesis is to examine how the existence of tax havens affects economic activity in non-haven countries. Towards this aim, we will proceed in consecutive steps. Chapter 2 is concerned with the definition of what a tax haven is. At this point, we cope with a difficulty of no unique definition of a tax haven. Our prime motivation is to cover various characteristics associated with this definition. We strive to extend the concept in a substantial way by including the notion of *Offshore Financial Center (OFC)* and *Secrecy Jurisdiction* as outlined by Financial Secrecy Index (FSI). Chapter 2 continues by compiling a rather inclusive list of tax havens in the above introduced broader sense. Consequently, this chapter provides a closer look at the obtained group of tax havens as a whole.

Finally, Chapter 3 illustrates tax havens' role of international financial intermediaries and performs an empirical study. By employing a battery of statistical tools we analyze the importance of a country's Gross Domestic Product (GDP) in the process of international investment. Specifically, we study whether the volumes of capital flows received from tax havens correspond to the size of either counterparts' economy. Moreover, we investigate the role played by counterparts' mutual distance. Thus, we are about to find out whether the capital flows between tax havens and non-havens are partly driven by physical distance even in a world of high capital mobility and relatively low transaction costs. Moreover, Chapter 3 compares our results with those previously achieved by Hines (2010) and discusses their overall relevance. Chapter 4 concludes.

# Chapter 2

## On Search for Tax Havens

*“It is often said that elephants are hard to describe but, once seen, they are easily recognized.”*

(McCann, 2006, p. 12)

The concept of a so called *tax haven* is not crystal clear and the same goes for the potential group of countries in question. Nonetheless, there are certain common characteristics which may be identified among many tax havens. In fact, these signs vary across individual tax havens so that some countries exhibit substantially more haven features than the others do. This chapter intends to shed a new light on what countries may be thought of as tax havens. We aim to introduce a broad sense of what a tax haven is. This is done by thoroughly reviewing the existing academic research as well as by subsequently compiling an inclusive list of potential tax havens.

### 2.1 What Defines a Tax Haven?

In order to deal accurately with a specific topic of tax havens, one first needs to classify what a *Tax Haven* actually is. From a general perspective, this task shall be accomplished by accepting a broadly recognized definition. Although the term itself originated in the mid 20<sup>th</sup> century and the history of tax havens can be traced back to early 1920s (Palan *et al.*, 2009), we still find ourselves in a somewhat difficult position since there is not any unique definition of what a tax haven exactly is. This might be caused by the fact that a spectrum of potentially suspicious countries is rather extensive. A substantial part of associated research has been interested in groups of countries defined by specific narrow criteria, as pointed out for instance by Hines (2010). Unfortunately, such an

approach requires a substantial degree of judgment. Academic literature which has been devoted to the topic in the last years provides us with a number of possible views on how a tax haven could be defined. Accordingly, the lists of so far considered tax havens vary considerably in size as do the criteria used for their assessment. Bearing this in mind we proceed in two steps. First, we conduct a brief survey of literature in order to describe specific characteristics of tax havens. Then, we compile an inclusive list of countries bringing together those commonly perceived as tax havens as well as those whose inclusion is still rather rare.

Importantly, it should be mentioned that we do not restrict our attention just to *countries* in the sense of sovereign states. Throughout the thesis, the word *country* refers generally to any jurisdiction or territory that has its own legal system. Thus, for the purpose of this work we do not distinguish between oversees or dependent territories (e.g. Isle of Man, British Virgin Islands), special administrative regions (e.g. Hong Kong, Macao), or various other forms of jurisdictions. We will treat them all equally. In this sense, the words *country* and *jurisdiction* will be used interchangeably.

Finally, this thesis perceives the term *Tax Haven* at its broader meaning. We notice that the term is typically being viewed as relational. Once introduced, it tends to divide all countries into two mutually exclusive groups. This fact supports our tenet to choose a more inclusive approach which prevents us from neglecting jurisdictions in borderline cases.

### **Characteristics of Tax Havens**

Indeed, the criteria under which a country qualifies to be a tax haven are far from being unambiguous. Tax Justice Network (TJN) argues that a central feature of a tax haven is that it provides an opportunity to escape taxation<sup>1</sup> or to avoid particular laws of other countries (TJN, 2007). Davidson (2007) alters this view by stating that the essential feature is whether the country customizes its own tax laws in order to attract foreign capital. A structured description of tax haven characteristics leads to a definition provided by the Organization for Economic Cooperation and Development (OECD) as summarized in OECD (1998). Namely, its Committee on Fiscal Affairs defined a tax haven as a jurisdiction which offers:

---

<sup>1</sup>This applies for both a legal tax avoidance and an illicit tax evasion.

- *“No or only nominal taxes (generally or in special circumstances) and offers itself, or is perceived to offer itself, as a place to be used by non-residents to escape tax in their country of residence;*
- *Laws or administrative practices which prevent the effective exchange of relevant information with other governments on taxpayers benefiting from the low or no tax jurisdiction;*
- *Lack of transparency;*
- *The absence of a requirement that the activity be substantial, since it would suggest that a jurisdiction may be attempting to attract investment or transactions that are purely tax driven.”*  
(OECD, 1998, p. 22)

Although the last listed criterion was later withdrawn, as reported for example by TJN (2007), OECD underlines that the lack of transparency is a highly important factor for identification of tax havens. The 1998 report further stressed the role of secrecy provided by tax haven countries. Accordingly, it is possible to distinguish between various forms of secrecy being offered by individual tax havens. All the forms can nevertheless be used to hinder an effective international exchange of information on taxpayers. It is further argued that tax havens' action is often facilitated by a good business infrastructure and an easygoing regulation. In the similar line, Hampton & Christensen (2005) confirm the conclusions of the 1998 OECD report. The authors further discuss the complexity of the tax haven issue by questioning its widely international character. OECD initiative on harmful tax practices has intended to encourage the international information exchange while improving transparency at the same time.

The OECD (1998) report also set a foundation for evaluation of potentially *“harmful preferential tax regimes”* in OECD member states. Without pointing at particular countries, the report discusses central characteristics of such questionable tax policies. These essential features are further accompanied by additional factors in order to ease the identification of tax regimes. Taken together, the assessed criteria do not differ substantially from those announced for identification of tax havens. Thus, for the sake of brevity, we do not discuss them separately. However, we acknowledge that also countries with potentially harmful preferential tax regimes may be an issue. Therefore, we are aware of the fact that one also needs to be concerned with OECD member states.

More recently, Dharmapala (2008) paid a lot of attention to the characteristics which are found to be common for many tax havens. The author tries to be clear about the term *tax haven* when stating that it “... *is applied to countries and territories that offer favorable tax regimes for foreign investors.*” (Dharmapala, 2008, p. 3) In the paper, he further mentions the features of tax havens in more detail listing zero or low corporate and withholding taxes at the first place. Furthermore, he argues that a strong secrecy, although having a declining trend in recent years, still belongs to the most desired features offered by tax havens.

In line with OECD, United States Government Accountability Office (GAO) reports in GAO (2008) a perceptible difficulty caused by the absence of a generally accepted definition of tax havens. Although they usually overlap substantially, the lists developed by different authors are sometimes focused on capturing a specific feature, e.g. strong financial secrecy. This variability complicates an effort to arrive at similar conclusions and to reach a consensus. Thus, GAO (2008) does not present its own definition nor a list of tax havens. Its perception of tax haven countries is based on combining characteristics frequently mentioned by other sources. Their evidence reflects similar signs as that presented earlier by OECD. Besides the tax characteristics, GAO mentions “*a lack of effective exchange of information with foreign authorities*” and “*a lack of transparency in legislative, legal, or administrative provisions*” as vital tax haven features (GAO, 2008, p. 2).

In a later paper, Dharmapala & Hines (2009) studied the main characteristics of countries which tend to become tax havens. The authors proposed an empirical method to concretize the driving forces behind the process of becoming a tax haven. Their work brings significant conclusions revealing the common signs of tax havens. They argue tax haven economies are, on average, more open which corresponds with the nature of financial industry they specialize in. Interestingly, tax havens are located closer to major exporters of capital. Despite the fact that an average tax haven is rather poorly endowed with natural resources (as estimated by the World Bank in 2006) it is probable to be significantly more affluent than an average non-haven country. As a matter of fact, tax havens endeavor to appeal to foreign investors. Dharmapala & Hines (2009) support this view by concluding that tax havens tend to offer a highly developed communication technology as well as a sophisticated infrastructure. Moreover, it should be noted that British legal origin accompanied by the English language are important aspects considerably increasing the probability of

becoming a tax haven. For further study of tax havens' characteristics please refer to Hines & Rice (1994); Diamond & Diamond (2002), and Hebous (2011).

### **Offshore Financial Services**

It is not surprising that many countries strongly oppose being referred to as tax havens. A characteristic ambiguity applies, therefore, to the fashion in which individual countries are labeled. In his paper, Zoromé (2007) reminds us that a number of names have been used to refer to the countries in question. These include for example *International Banking Center*, *International Financial Center*, or *Offshore Banking Center*. Although the underlying principles are very similar to one another the descriptive terminology differs. The author himself uses the term *OFC*. Not surprisingly, these and similar names are even preferred by some of the countries for they desire to be associated with provision of international financial services rather than with concerns they thereby rise. Zoromé's paper elaborates on delivering a suitable definition of OFCs. In the first part, he brings an overview of literature resulting in a summary of OFC's main characteristics. Unsurprisingly, these countries impose low or no taxes. Moreover, as the name suggests, OFCs specialize in providing various financial services mainly to residents of other countries which is usually accompanied by a significant amount of anonymity. It is further stressed that the volume of financial services far exceeds the size and needs of domestic economies. OFCs ensure legal protection and other services associated with catering a business friendly environment they attempt to establish. The author stresses that OFCs depend heavily on their capability of attracting financial business from other countries. Considering a highly competitive nature of financial industry it becomes clear that OFCs' incentives to comply with international standards on information exchange are rather low. On the other hand, preserving a favorable regulatory environment is vital for them to remain attractive.

The characteristics discussed by the last-mentioned paper correspond to OFCs' description presented earlier by IMF (2000). The institution states that the range of countries which may be potentially thought of as OFCs is too wide to be captured by a single definition. The attempts to do so result in a very broad notion of OFCs. In this sense, any financial center offering offshore services could be perceived as an OFC. Likewise, McCann (2006) is rather skeptical about the effort to explicitly define offshore. According to McCann, a defining feature of OFC is its very ability to change quickly in order to adapt to new

circumstances. Notwithstanding, IMF (2000) emphasizes the importance of an appropriate identification of OFCs' true nature. It is central that the majority of financial transactions is initiated elsewhere, there are predominantly nonresidents present on both sides of financial institutions' balance sheets. Moreover, nonresidents also mostly control the institutions participating in the process. In addition to the banking activity, some centers also specialize in other services. These include for example insurance, tax planning, trust business, and fund management. Provision of these services is usually accompanied by low or zero taxation, almost negligible regulation, and banking secrecy providing a veil of anonymity.

As noted by TJN (2007), not all of OFCs corresponding to the previous characteristics would necessarily fall into the category of pure tax havens as defined by OECD (1998). However, one may easily note that the features and characteristics presented for both tax havens and the OFCs overlap considerably. The same applies for the lists produced as will be discussed later on.

### **Financial Secrecy**

Having dealt with definitions concerning two of the central aspects of tax haven countries - low or no taxes and an extensive provision of offshore financial services - we turn our attention to the third building block of the tax haven phenomenon, *secrecy*. Naturally, in almost every jurisdiction, companies and individuals may enjoy a certain level of confidentiality. This applies for financial confidentiality in particular. However, the scope and strength of confidentiality provided vary considerably across countries. As a matter of fact, some countries endeavor to keep the level of confidentiality as low as possible while trying to be generally transparent in their conduct. Nonetheless, there are also numerous groups of countries at the opposite end of the spectrum. These countries are associated with a specifically high level of what is called *financial secrecy*. Moreover, they are also involved in its extensive provision to international customers.

Across jurisdictions, financial secrecy takes a variety of forms, it differs not only in its strength, but also in its nature. Following the argumentation presented by FSI (2011), we can recognize financial secrecy of three different kinds.



- Probably the most popular flavor of financial secrecy is that known as *bank secrecy*. This is a form of traditional high-level confidentiality offered to clients based on legal requirements of a given jurisdiction. Therefore, violation of this form of secrecy may result in application of criminal penalties. As summarized in the report by Thompson *et al.* (2001), bank secrecy varies considerably from one jurisdiction to another. In one country, it prohibits a disclosure of bank ownership or of the outcomes of bank examination. In another, it forbids a disclosure of information about bank clients and their transactions. Such a form of secrecy is offered for instance by Austria, Luxembourg, or Switzerland.
- The second form of financial secrecy plays a very important role on global scale despite the fact that it is less well known. It is associated with countries which permit creation of special legal entities whose ownership and conduct is then kept secret. These entities involve for instance trusts, foundations, and anstalts.
- The third type of secrecy is characterized by unwillingness or even by refusal to cooperate with other countries and supra-national authorities in terms of information exchange. Countries allowing this form of secrecy generally tend to create various obstacles in order to avoid an effective exchange of information. (FSI, 2011)

In the last years, there were some attempts to decrease the opacity associated with operations of tax havens. Nonetheless, attention was mostly paid to narrowly defined problems associated with secrecy rather than to capturing a global issue. According to Picard & Pieretti (2008), tax havens' incentives to cooperate in the international exchange of information are very low since "*secrecy represents an important asset of offshore financial centers*" (Picard&Pieretti 2008, p. 4). However, the authors further argue that offshore financial institutions can be effectively incentivized to collect and disclose the information on their clients' identity as well as on origins of their funds. The incentive is supposed to be ensured by the pressure of possible reputation harm caused to the clients. For a detailed discussion see also Antoine (1999).

FSI arguably represents the first politically neutral attempt to account for financial secrecy with respect to its national sources and global impacts. As repeatedly argued by its authors, FSI is aimed to serve as an analytical tool for evaluating and describing global financial secrecy. In short, it combines

two measurements in an effort to account for both quantitative and qualitative significance of individual jurisdictions. The qualitative part evaluates the secretiveness of laws, regulations, and international treaties of a country. The quantitative part adjusts the measurement for a country's size and its importance for international financial markets. Based on the obtained qualitative characteristics and global scale weighting, countries are ordered according to their scores. This way a list of 73 *secrecy jurisdictions* was identified. For technical details on methodology and for further study of the construction of FSI please refer to FSI (2011).

Accordingly, *Secrecy Jurisdiction* is a term to take account of countries predominantly associated with providing financial secrecy as described above. The term itself is believed to have originated in the late 1990s in the USA as noted by TJN (2011). One of its early uses appears for instance in Thompson *et al.* (2001). The term is preferred and frequently used by the FSI initiative, since it stresses a negative role played by secrecy. On the other hand, Desai *et al.* (2006b) views financial secrecy not only as a tool used for illicit money transfers but also as an opportunity for the realization of licit financial services accompanied by tax advantages.

## 2.2 Identified Tax Havens

Together with TJN (2011) we argue that none of the previously mentioned terms is truly ideal despite the fact that all of them are being used. Every designation highlights another aspect whether it is low tax, extensive financial services offered to non-residents, or an abnormally high confidentiality level. Thus, for the purposes of this work, we intend to introduce an extensive notion of a tax haven by bringing together all the characteristics represented by the three central features. Accordingly, we would like to include those countries which meet any of the previously described tax haven concepts. This task is accomplished in two essential steps. First, we follow the research presented by Murphy (2009) based on the listing principle. Second, the identified group of countries is further enhanced by those which have exceeded a predefined level of secrecy as measured by FSI (2011).

In the first half of his paper, Murphy (2009) identifies an inclusive group of tax havens by reviewing an exhaustive portion of compatible research in the period ranging from the late 1970's to the recent years. He includes a total of

eleven lists of tax havens. A chronologically ordered overview of these lists is presented in Table A.1 in Appendix A.

The author himself states that the definitions of what a tax haven is, are often conflicting. However, his reasoning hopes to reach a consensus by taking advantage of a longer period of about thirty years. Jurisdictions identified by individual lists are ordered according to the frequency with which they were found on the lists. This is how a long list of 91 jurisdictions was formed. Naturally, it ranges from the countries which were found on every single list being on the top, to those found just once. As Murphy (2009) points out, 36 jurisdictions were found on at least seven lists over the period which is a promising accord. Subsequently, the author neglects the countries with only one listing as being insufficiently identified. For further study, he recommends using those countries which were identified at least twice. We note that the criterion of at least two listings is imposed explicitly. On the other hand, it seems to be reasonable to regard one listing only as being insufficient since the period of about thirty years allows for considerable changes in a country's policy. Importantly, 61 jurisdictions obtained two or more listings to get qualified. These countries are listed in Table 2.4 as being written in normal font. The number of listings for each qualified country is presented in Table A.3 in Appendix A.

The author immediately excludes Niue from the group of identified tax havens since it was repeatedly reported by the International Monetary Fund (IMF) as not exhibiting any tax haven activity in recent years. For a similar reason of no tax haven activity, Tonga and South Africa were also excluded. For our purposes, we further decided not to include the USA where the tax haven activity is accounted to the state of Delaware. A potential inclusion of the USA would not correspond with reality and would represent an extreme outlier in the data. Portugal was also excluded for a similar reason. Madeira itself would definitely qualify as a tax haven; however, the data to our disposal were for the whole Portugal only.<sup>2</sup> The underlying study adds to the list two of the EU Member states, namely Austria and Belgium, for their refusal to comply with the EU Savings Tax Directive at the time the study was prepared. This difficulty still holds for Austria as last reported by European Commission (2012). Therefore, Austria was also included<sup>3</sup>.

In order to fully incorporate the aspect of secrecy, we contrasted the list

---

<sup>2</sup>Madeira is a Portuguese autonomous territory in the Atlantic ocean accounting for about 3% of Portuguese GDP and for roughly the same share of its population.

<sup>3</sup>A brief overview of reasons why Austria was included is presented later in this chapter.

with that published by FSI (2011). We were concerned with the qualitative score described above. Methodology of the Index distinguishes seven categories corresponding to the strength of secrecy in individual countries. As a lower bound we explicitly choose the score of 60 points, since it divides the spectrum into three categories of countries with a lower and three categories with a higher secrecy score. Those 53 countries with a secrecy score higher than 60 points are listed in Table A.4 in Appendix A.

As this table suggests, the group of countries with secrecy scores higher than 60 overlaps significantly with the previously discussed list of tax havens. Furthermore, it is worth noticing that there are a few countries whose secrecy scores exceed the predefined level and which, however, would not have been included on the list by Murphy (2009). We add these countries to the list in Table 2.4 written in the bold font. The only exception we made was that we also included Belgium although it reached the secrecy score of merely 59 points. On the other hand, no state scored exactly 60 points nor was the score of Belgium reached by any other country. However, the main reason to include Belgium was its high overall score in the FSI. When weighted by its global significance, Belgium was ranked at the 15th place being among the world's most crucial secrecy jurisdictions<sup>4</sup>. This way we eventually obtained the final list of 63 countries listed in Table 2.4 which we think of as tax havens.

To avoid confusion, once we have identified the countries in question we refer to all of them as tax havens for the rest of the work. In doing so, we bear in mind a tentative nature of this term which is employed to refer to a broad group of countries. As discussed above, we have also noticed a frequent usage of other similar terms. However, we admit that *“none of them is ideal, since none captures the full range of services that such places provide”* (TJN, 2011, p. 1). Most importantly, regardless of the labels such countries may possibly get, we highlight that all of them exhibit highly similar above-mentioned features and shall therefore be comprised in one group.

### **Inclusion of Unusual Havens - Additional Rationale**

Our final list of identified tax havens presented in Table 2.4 contains also a few countries whose inclusion might seem unusual at first sight. Therefore, at the end of this chapter, we deliver an additional overview of particular reasons for inclusion of Austria, Belgium, the United Kingdom, and Japan.

---

<sup>4</sup>Later in this chapter, we review the main reason for inclusion of Belgium.

## Austria

As already mentioned earlier, Austria was added by Murphy (2009) to his originally compiled list. As the main reason, the author states its ongoing decision not to fully comply with the EU Savings Tax Directive<sup>5</sup>. FSI (2011) ranks Austria at the 17<sup>th</sup> position while evaluating the degree of secrecy in its laws by 66 out of 100 points. Authors of the Index however regard the secretive nature of the Austrian banking system as providing a scope for potential tax haven activities. Austria has been recognized as a regional financial center, some voices expressed concerns that there might be a substantial practice of money-laundering as reported by INCSR (2008). In addition to the absence of inheritance tax<sup>6</sup>, Austria offers an opportunity of establishing secretive private foundations with a minimum public information whose beneficiaries are then kept undisclosed (Kalss *et al.*, 2004).

## Belgium

Historically, bank secrecy was an important phenomenon in Belgium since it has long been protected by law. Therefore, Belgium first did not agree to the automatic exchange of information under the EU Saving Tax Directive. Instead, it decided for an alternative option represented by withholding taxes and allowed for a transition period. Eventually, Belgium made the decision to comply with automatic exchange of information in 2009 (it came into force in 2010). Nonetheless, bank secrecy still remains applicable when facing Belgian tax authorities. Furthermore, there is no public record of companies' and trusts' details (FSI, 2011). For many years, the Belgian city of Antwerp is recognized as the world's center for trade in diamonds which, according to INCSR (2008), raises serious concerns associated with a possible scope for money-laundering. As briefly mentioned above, Belgium ranked at the 15<sup>th</sup> place in FSI 2011 global ranking which classified it among the world's most significant secrecy jurisdictions.

---

<sup>5</sup>Originally accompanied by both Belgium and Luxembourg, Austria chose to apply an alternative option in form of a withholding tax for a transition period.

<sup>6</sup>An electronic version of the official decision by Austrian Constitutional Court from 2007 is available *online*.

## Japan

In FSI 2011, the country scored 64 secrecy points. After weighting by its global significance, Japan was ranked at the 8<sup>th</sup> place which makes it one of the most important countries on the global scale of offshore and secrecy. Over decades, Japan has developed a strong position of an important financial center. The process was largely fostered by establishing the so called Japan Offshore Market in 1986. Further attractions for foreign financial business followed in form of various tax exemptions and relaxed regulation. According to FSI (2011), Japan accounts for about 2% of the global offshore services. It is further argued that Japan's cooperation in international exchange of information is permanently insufficient and should be strengthened. In Japan, company ownership details are not kept in official records and are not publicly accessible. In order to improve transparency, INCSR (2011) specifically stresses that financial institutions should be required to collect information about business accounts and transactions.

## United Kingdom

Unlike the foregoing three countries, the United Kingdom was identified by Murphy (2009) based on the listing method. In particular, it was listed three times within the 11 lists summarized in Table A.1. Hence, there is no need to consider the United Kingdom based solely on the score from FSI (2011) since it already belonged to the initial group as indicated in Table 2.4. However, FSI ranking helps us understand the country's phenomenal significance. Accordingly, the United Kingdom's share of offshore market represents about 20% of the global total. Furthermore, when assessed individually the country ranked at the 13<sup>th</sup> position in FSI 2011. In general, there is a special aspect associated with the United Kingdom, which allows for its unique status. Namely, it is an important role played by Britain's imperial history. There are still close ties to certain parts of the former empire whether these are British Overseas Territories, Crown Dependencies, or the countries of the Commonwealth. To some extent, the conduct of business is there still shaped by common law. Without having to dip into a detailed discussion we point out just one of the unusual features the United Kingdom can offer. Interestingly, there is a preferential tax regime for individuals which distinguishes between residency and domiciliation. Lowtax.net<sup>7</sup> reports that a British resident who is not domiciled in the

---

<sup>7</sup>Detailed discussion under Lowtax.net

United Kingdom may take advantage of considerable tax exemptions on their income which has originated outside the United Kingdom. Moreover, the use of English language—*lingua franca* of today's finance—was spread widely during the period of British Empire. Thus, native usage of English language definitely seems to be an appreciated asset offered by many tax havens. Among other aspects, the following section shows the extend to which English language is spoken among tax havens as an official language.

## 2.3 Descriptive Analysis

This section aims at providing a closer look at the previously identified group of tax havens as listed in Table 2.4. As discussed above, tax haven countries exhibit a number of common signs which play a central role in the process of identifying tax havens. In addition to the three main building blocks—low or no taxes, provision of financial secrecy, and extensive offshore financial services—it is possible to also recognize other common features. These complementary characteristics are not used to determine whether a country should be thought of as a tax haven. However, as pointed out by Dharmapala & Hines (2009), a careful search reveals a variety of similarities among already recognized tax havens.

In the first instance, it is often argued, for example Hines (2005), that tax havens are primarily small countries with low population numbers and almost negligible volumes of GDP. By contrast, they are known to be extraordinary rich. For some reason, there is a widely accepted idea of tax havens being located predominantly on islands as highlighted by Hines (2010). In the course of following text, we examine these aspects in order to find out the extent to which they apply for our group of tax havens.

With use of data available from the United Nations Conference on Trade and Development (UNCTAD)<sup>8</sup> and supplemented occasionally from the World Factbook by CIA (2009)<sup>9</sup> we present a brief descriptive analysis of the group of tax havens identified in the previous chapter. Descriptive analysis is intended to survey the underlying data in order to deliver a comprehensive view. In an effort to outline a sufficient picture, data were employed to cover the period of two decades starting from 1992.

---

<sup>8</sup>Complete database available from [unctadstat.unctad.org](http://unctadstat.unctad.org)

<sup>9</sup>The World Factbook by CIA (2009) is available from [cia.gov/library/publications/the-world-factbook/index.html](http://cia.gov/library/publications/the-world-factbook/index.html)

From the geographical point of view, it is interesting to note that tax havens generally tend to be smaller in size. The median tax haven covers an area of merely 715 km<sup>2</sup>. Furthermore, we found only twelve tax havens larger than the Czech Republic which is regarded as a medium-sized country. On the other hand, this is not to say that tax havens necessarily need to be small countries. In our group of havens, Botswana was found to be the largest as it covers the area of about 600 thousand km<sup>2</sup> which is a size similar to that of the Ukraine. Botswana is then followed by Japan with an area of almost 378 thousand km<sup>2</sup> and other influential countries e.g. the United Kingdom. Thus, we confirm that there is a majority of rather small tax havens. However, the data also suggest that when thinking about tax havens our attention should not be limited to small countries only. As noted by Shaxson (2012), it seems to be useful to further alter the widely-held perception of tax havens in terms of their geographical size.

Table 2.1: Summary of Island Tax Havens

		<b>% of total</b>
<b>Number of island havens</b>	36	57.14
<b>Area covered</b> (ths of km <sup>2</sup> )	1,044.5	32.21
<b>Population</b> (ths)	300,583	63.73
<b>GDP in 2011</b> (bln of USD)	9,112.2	65.45

Data Source: UNCTAD database, The World Factbook, CIA

Note: The total refers to the whole group of tax havens.

Given their nonrandom location, we notice that over 85% of identified tax havens have a direct approach to the sea. Moreover, there are 36 out of 63 havens located primarily on at least one island<sup>10</sup> leaving aside a group of 9 landlocked havens out of which all but one are remarkably located in Europe. Table A.6 in Appendix A lists the island tax havens. The widespread notion of island havens is supported by the fact that over 65% of havens' GDP was produced by island havens as of 2011. Interestingly, almost 64% of tax havens' population is settled on islands although these represent merely 32% of the area covered by tax havens. As summarized in Table 2.1, regarding the number of

<sup>10</sup>Malaysia was not perceived as an island country since over two thirds of the population are settled on the peninsula.



countries and distribution of their population, islands play a key role among tax havens.

Hines (2010) and Hebous (2011) highlight that tax havens are small in size of their population which tends to be often lower than one million. Our data suggest, that there are 38 havens with population individually below one million<sup>11</sup>. Consequently, their cumulative population is very small accounting for about 1.3% of total population of tax havens. Within our group of havens, the median population turns out to be just 320 thousand people. Large havens, on the contrary, accommodate considerably high population numbers with the highest of 126,5 million reported for Japan. Therefore, the population of some havens is considerably large. In total, there is about 6.7% of the world's population living in tax havens which represents approximately 471 million people.

Table 2.2: Average Real GDP per Capita 1992–2011

<b>Year</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>
<b>THs</b>	14,825	15,043	15,475	15,916	16,214	16,758
<b>World</b>	5,696	5,692	5,796	5,876	5,982	6,121
<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
17,410	17,892	18,465	18,560	18,649	18,756	19,273
6,191	6,319	6,511	6,550	6,607	6,707	6,897
<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
19,769	20,392	20,909	20,776	19,633	19,955	20,143
7,057	7,261	7,466	7,481	7,222	7,428	7,519

Note: Average real GDP per capita in 2005 constant US dollars

Data Source: UNCTAD database, Table in author's layout

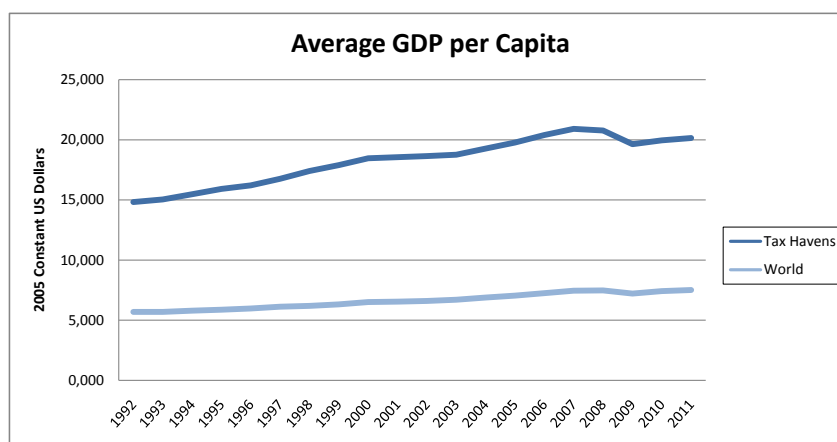
Still another tax haven characteristic is observable from the data. Namely, it is a phenomenon of the former British Empire. When omitting those tax havens which have never been colonized we are left with 50 countries out of which 37 have ever been closely linked to the today's United Kingdom. These are essentially former British colonies, today's Crown dependencies, Overseas territories and other Commonwealth realms. As argued by Shaxson (2012), their close ties to the United Kingdom as well as to one another are of great

<sup>11</sup>Data on population are UNCTAD estimates reported for 2011.

importance. This finding partly corresponds with the use of English language. Given the historical world order it is not very surprising that English is spoken in 34 havens as an official language, followed by Dutch and Spanish each spoken in 4 tax havens.

As mentioned earlier, tax havens are widely believed to be rich countries. In terms of per capita GDP, the data seem to deliver a supportive evidence. Every single year over the 1992–2011 period, the average of per capita GDP calculated for our group of tax havens significantly exceeded the average GDP per capita reported by UNCTAD for the world as a whole. Table 2.2 presents the GDP per capita averages in chronological order. The averages for both groups were obtained based on 2005 constant US dollars. More conveniently, in terms of current US dollars, the average of 2011 per capita GDP within the group of tax havens amounts to USD 28,681 which obviously by far exceeds the world average of USD 9,998<sup>12</sup>.

Figure 2.1: Average Real GDP per Capita 1992–2011



Data Source: UNCTAD database, author's calculation and layout

Figure 2.1 illustrates the persistent gap between per capita GDP of tax havens as compared to the world average. Since GDP is measured in real terms, it may be seen from the figure that the average tax haven GDP increased significantly. Notably, the difference between averages did not decrease. On the contrary, it kept growing over the period. As a result, the gap between GDP

<sup>12</sup>A somewhat higher average of USD 11,900 was reported by CIA (2009).

averages widened from USD 9,129 in 1992 to USD 12,624 in 2011 as measured in 2005 US dollars. Dharmapala & Hines (2009) proposed a link between the affluence of tax havens and their above-average quality of governance. The authors argue that a possible interpretation might be based on the fact that countries which are already well governed subsequently become more probable to evolve into tax havens. Accordingly, poorly governed countries are less likely to become tax havens. For an extensive empirical discussion please see also Slemrod & Wilson (2009).

Table 2.3: Comparison of Average GDP Growth Rates

Average annual real GDP growth, 1992 - 2011		
	<b>World</b>	<b>Tax Havens</b>
Average growth per capita	1.43%	1.98%
Absolute average growth	2.76%	3.53%

Data Source: UNCTAD database, author's calculation and layout

Hines (2010) used a group of tax havens identified by Hines & Rice (1994) to find out that during the 1992–2006 period these tax havens experienced a faster economic growth as compared to the world average growth rate of per capita GDP. We note that closely similar findings for the 1982–1999 period were earlier reported in Hines (2005). Apparently, the same pattern can be extended even for a wider group of tax haven countries that we are concerned with. Table 2.3 summarizes average annual growth rates of real GDP in the 1992–2011 period measured again in 2005 USD. It contrasts the average growth rate of the world as a whole with that calculated for the group of tax havens. A more rapid growth of tax haven economies seems to be even more significant when reported in absolute terms instead of per capita.

Table 2.4: List of Tax Havens

Tax Havens			n = 63
Andorra	Grenada	Monaco	
Anguilla	<b>Guatemala</b>	Montserrat	
Antigua and Barbuda	Guernsey	Nauru	
Aruba	Hong Kong	Netherlands	
Austria <sup>1</sup>	Hungary	Netherlands Antilles	
Bahamas	Ireland	Panama	
Bahrain	Isle of Man	Philippines	
Barbados	Israel	Samoa	
Belgium <sup>1</sup>	<b>Japan</b>	<b>San Marino</b>	
Belize	Jersey	Seychelles	
Bermuda	Latvia	Singapore	
<b>Botswana</b>	Lebanon	St Kitts and Nevis	
British Virgin Islands	Liberia	St Lucia	
Brunei	Liechtenstein	St Vincent and Grenadines	
Cayman Islands	Luxembourg	Switzerland	
Cook Islands	Macao	Turks and Caicos Islands	
Costa Rica	Malaysia	United Arab Emirates	
Cyprus	Maldives	United Kingdom	
Dominica	Malta	Uruguay	
<b>Ghana</b>	Marshall Islands	US Virgin Islands	
Gibraltar	Mauritius	Vanuatu	
Niue*	Tonga*	South Africa*	
USA**	Madeira (Portugal)**		

Note: Tax havens identified by Murphy, 2009 are written in normal font. Austria and Belgium added by Murphy. The original group is enriched by jurisdictions which scored more than 60 points in FSI 2011 secrecy score and were not identified by Murphy, 2009. These are in bold. (\*) indicates that a country was excluded for no longer being considered a tax haven. (\*\*) USA excluded since the identification can be accounted just to the state of Delaware. Portugal excluded, identified because of Madeira. Table in author's layout.

# Chapter 3

## Empirical Analysis

In this chapter, we aim to obtain further insight into our group of tax havens. In particular, we first illustrate the extent to which tax havens serve as international financial intermediaries. Subsequently, this chapter focuses on the impact the existence of tax havens may have on other countries in terms of economic activity and international capital flows. Towards this aim, we intend to employ a model proposed by Hines (2010) on the above-identified broad group of tax havens listed in Table 2.4. In his paper named *Treasure Islands*, Hines developed a model to estimate possible effects of tax havens on non-haven countries with regard to economic activity in both tax havens and non-havens. He suggests using data on total volumes of portfolio investment to account for the arguable positive incentives tax havens might be able to spread to other countries. Eventually, this chapter concludes by offering a literature-based discussion associated with our results.

### 3.1 International Capital Flows

International private capital flows are usually decomposed into Portfolio Investment and Foreign Direct Investment (FDI). To avoid confusion, it is more than useful to clarify the difference between portfolio investment and FDI which will come handy later on. Dunning (1981) recommends using the definition proposed by IMF. Namely, direct investment is distinguished by laying up a claim to take some control over the invested in enterprise. Portfolio investment, contrarily, does not usually provide the investor with any means to control the invested in entity. Thus, the ability to exercise control over the foreign entity is

based on a substantial share of ownership almost always being defined as 10% or higher claim (Ott, 2008).

Hines (2010) argues repeatedly that tax havens receive large-scale international capital flows. We demonstrate this phenomenon on data. In Table 3.1, we show the development of volumes of portfolio investment liabilities and assets. Figures reported for *Liabilities* stand for sums of volumes associated with 20 tax havens which had the highest gross portfolio liabilities at year-end 2011. The same logic applies for portfolio investment *Assets*. Dollar amounts are reported in millions.

Table 3.1: Portfolio Investment Holdings of Tax Havens

<b>Top 20 Totals</b> (USD millions)			
	<i>2001</i>	<i>2006</i>	<i>2011</i>
Liabilities	4,676,716	13,198,211	14,696,784
Assets	5,977,351	15,057,532	17,487,800

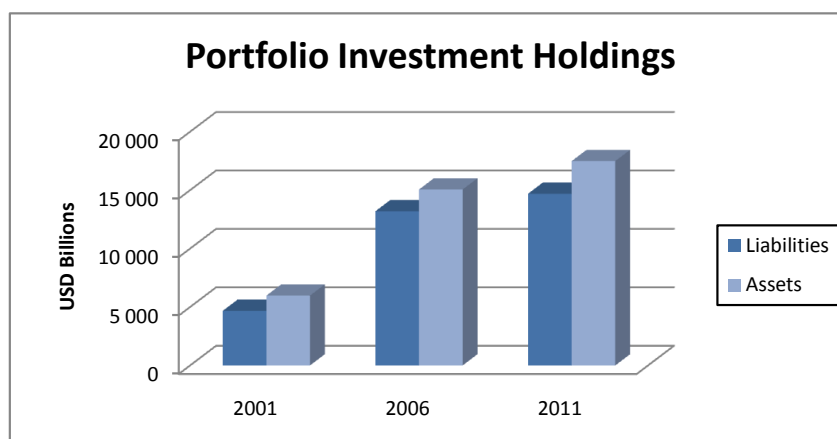
Data Source: IMF CPIS database, author's calculation

In more detail, Table A.7 takes account of portfolio investment liabilities in tax havens. In five-year steps, the table covers the period ranging from 2001 to 2011. It captures the volumes of gross portfolio investment liabilities for 20 countries which accumulated the highest amounts. The items are reported in descending order according to data state at year-end 2011. Moreover, we argue that tax havens are not only large-scale receivers of capital flows. To some extent, Table A.8 lends support to the assertion that tax havens are significant intermediaries of international financial flows. By comparing Table A.7 to Table A.8 one easily notes that more than the top 10 tax haven receivers are all present on the list of the top 20 tax haven portfolio investors. Interestingly enough, exactly the same holds also vice versa. For the sake of brevity, the two last mentioned tables are included in Appendix A.

Apparently, there is an upward trend in the volumes of capital flows routed through tax havens. Figure 3.1 shows holdings of portfolio investment assets and liabilities as reported for top 20 portfolio investor and receiver countries. The amounts are measured in billions of US dollars. Obviously, for both outbound and inbound portfolio investment the increase of processed gross volumes is especially apparent in the 2001–2006 time period since the pace was later

negatively affected by the worldwide economic slowdown. Furthermore, Hines (2010) notices that gross volumes of portfolio investment have even tripled for particular tax havens, e.g. Cayman Islands, during 2002–2007 period. On one hand, he attributes such a trend to an established role of tax havens as intermediaries and to their rising importance (Hines, 2005). On the other hand, one may associate the increase in volumes of international investment with a considerable drop in transaction costs. Thus, growing volumes of capital flows may be seen as being fostered by lower transportation and communication costs in the global economy (Hong & Smart, 2007).

Figure 3.1: Portfolio Investment – Top 20 Assets and Liabilities



Data Source: IMF CPIS database, author's calculation in Table 3.1

It is therefore not surprising, that data on FDI approve a similar pattern in regard to the volumes routed through tax havens. However, what might be unexpected is how high tax havens rank in the global comparison. Table 3.2 presents the volumes of FDI for top 10 countries with the highest outbound and inbound direct investment, respectively, in the left and right columns. Positions at year-end 2011 are drawn from the Coordinated Direct Investment Survey (CDIS) by the IMF. One notices that some *tax havens* e.g. Luxembourg and the Netherlands ranked exceptionally high. Obtained figures are even more striking when we consider the incomparable sizes of individual economies listed in Table 3.2. Tax havens are written in are in *italics*.

Table 3.2: FDI Inward and Outward Positions

<b>Invested from</b>	<b>2011</b>		<b>Invested to</b>
United States	4,155,551	3,327,456	<i>Netherlands</i>
<i>Netherlands</i>	4,117,806	2,653,457	<i>Luxembourg</i>
<i>Luxembourg</i>	2,731,302	2,547,828	United States
<i>United Kingdom</i>	1,724,658	1,906,908	China
France	1,597,466	1,063,652	<i>United Kingdom</i>
Germany	1,356,096	1,029,794	<i>Hong Kong</i>
<i>Switzerland</i>	1,027,637	973,112	France
<i>Hong Kong</i>	971,819	927,505	Germany
<i>Japan</i>	962,790	705,689	Brazil
Canada	670,417	643,038	<i>Switzerland</i>

Note: Top 10 inward and outward FDI positions in USD millions.

Data Source: IMF CDIS database, Table in author's layout

In any way, the data suggest that the phenomenon of tax havens is not a marginal issue. Although some of them might seem individually insignificant, together they account for a substantial share of global financial markets (Palan *et al.*, 2009). It is indeed challenging to make a sound judgment given their overall heterogeneity. Nonetheless, it shall be seen that tax havens do not just stand aside being primarily holiday resorts in the Caribbean. Yet, they represent key financial players who are too important to be neglected or disregarded.

## 3.2 Description of Data Used for Estimations

This section describes the data used for the purpose of following estimations, announces their sources, and discusses their features. We compiled a new dataset comprising publicly available data on GDP for both tax havens and non-haven countries, bilateral distances between countries, and data on mutual capital flows. It is complicated to identify suitable variables which would serve as reasonable proxies, would not be highly correlated with each other, and for which there would be enough data available for a satisfyingly high number of countries around the world. The *GDP*, *Distance*, and *Invested* variables employed in our model comply well with these criteria. Their principal advantage is a relatively high data availability for a vast majority of countries including economies of



a small size or countries which are not very transparent about their reporting qualities.

In our model, the absolute GDP is supposed to serve as a proxy accounting for the overall size of economic activity in a given country. As a source of GDP data we predominantly used World Development Indicators (WDI) 2012<sup>1</sup>, a rich database by the World Bank. For the purposes of our analysis, the most recent data available on GDP were those for 2011. GDP is measured at purchaser's price in billions of US dollars. The other source of GDP data was the UNCTAD database<sup>2</sup> by which we supplemented our dataset. For a reasonably small number of countries, 2010 GDP was used since it was reported as the more recent available. Furthermore, in order to obtain GDP data for very small countries or dependencies, e.g. Guernsey, Gibraltar, Jersey, Isle of Man, Netherlands Antilles or US Virgin Islands we referred to The World Factbook by Central Intelligence Agency (CIA)<sup>3</sup>.

Mayer & Zignago (2006) compiled a considerably large dataset on countries' geographical data. On a bilateral basis, the dataset provides, among other information, mutual distances for 225 countries and territories delivering several different measures. Based on latitudes and longitudes, data for variables `dist` and `distcap` use the so called great circle approach. Therefore, a simple distance between two points is calculated as being measured on the surface of a sphere<sup>4</sup>. Distances reported for `dist` are those between the most important cities in terms of population. `Distcap` calculates distances between capital cities. For the purposes of our analysis, we decided to make use of `dist` variable since the most populated areas tend to account for a significant share of a country's economic activity. It should be mentioned that our approach differs at this point from that presented by Hines (2010) who assumed countries to be perfect circles and considered distances calculated between their geometric centers. We intentionally did not follow this approach in order to rather capture distances between areas where an important share of the economic activity is brought to existence.

The original dataset lacked in distances for Guernsey, Jersey, the Isle of Man, Liechtenstein, and the US Virgin Islands. To obtain distances for these countries, we first used those reported for their nearby countries. In particular,

---

<sup>1</sup>Available from [data.worldbank.org](http://data.worldbank.org)

<sup>2</sup>UNCTAD database available from [unctadstat.unctad.org](http://unctadstat.unctad.org)

<sup>3</sup>The World Factbook by CIA is available from [cia.gov](http://cia.gov)

<sup>4</sup>It reflects specific features of spherical geometry as opposed to distances measured in the Euclidean geometry.

United Kingdom was used for Guernsey, Jersey, and Isle of Man. US Virgin Islands were substituted by the adjacent British Virgin Islands. Distances reported for Switzerland were used in the case of Liechtenstein. Additionally, we computed distances for the above-mentioned countries using the World Distance Calculator as distances between capital cities<sup>5</sup>. Since the mentioned countries are rather small in size, the most populated cities are equivalent to their capitals. Either method did not cause any important change in the results. To obtain estimates presented in all the following tables the former approach was eventually preferred. Distances are measured in thousands of kilometers.

The empirical study covers the analysis of private international capital flows dividing them into portfolio investment and FDI both of which are then studied separately. Consequently, this method enables us to compare the results. As a source of data, we made use of the geographic breakdown table of total portfolio investment assets which is a database published by the IMF within the Coordinated Portfolio Investment Survey (CPIS)<sup>6</sup>. To obtain data on FDI, we proceeded in a similar manner. The IMF also provides a suitable database within its CDIS<sup>7</sup>. Data on international capital flows are measured in millions of 2011 US dollars.

Although we gathered a considerably large amount of information regarding the volumes of both portfolio investment and FDI, we still face certain data incompleteness. The issue originates from the fact that some countries might tend to misreport the data. They either do not participate in the data collection initiated by the IMF and thus do not intentionally provide any data or the information provided is likely to be incomplete. Furthermore, some monetary authorities do not agree to disclose reported data for the purposes of geographic breakdown. This concern represents another source of possible data unavailability. Therefore, one needs to bear in mind the possibility of facing a selection bias.

### 3.3 Model Specification

To study a possible impact of tax havens' existence on non-haven countries' economic performance, we specify a model proposed by Hines (2010). Consequently, this model is estimated using the dataset described in the previous

---

<sup>5</sup>World Distance Calculator is available from [distancecalculator.globefeed.com](http://distancecalculator.globefeed.com)

<sup>6</sup>CPIS database is available from [cpis.imf.org](http://cpis.imf.org)

<sup>7</sup>CDIS data can be obtained from [cdis.imf.org](http://cdis.imf.org)

section. Hines argues that the volume of capital flows routed through a particular tax haven depends positively on the size of a counterpart non-haven economy as measured by non-haven GDP. Furthermore, the author finds out that the effect of non-haven GDP diminishes considerably with increasing distance from a tax haven. The size of a tax haven's economy itself, by contrast, is argued to be of low importance. Ultimately, Hines's results can be summarized by saying that volumes of capital flows between tax havens and non-havens are positively affected by their geographical proximity and by the size of non-haven GDP. In what follows, we scrutinize whether the previously stated results are consistent with our group of tax havens identified in Chapter 2. This is accomplished by performing our own analysis. Equation 3.1 represents three model specifications we are about to work with.

$$\text{Invested}_i = \alpha_0 + \alpha_1 \text{GDP\_TH}_i + \alpha_2 \text{GDP\_non}_i + \alpha_3 \text{Distance}_i * \text{GDP\_non}_i + u_i \quad (3.1)$$

In the equation above,

- $\alpha_0, \dots, \alpha_3$  represent the coefficients to be estimated
- $u_i, i \in \{1, \dots, n\}$  stands for the error term

The model employs following variables:

- **Invested** serves as the dependent variable. First, it represents the magnitude of private international capital flows from the  $i$ th non-haven country to a tax haven. Second, it stands for the volume of capital flows in the other direction; namely, from the  $i$ th tax haven country to a non-haven country. Third, it is employed to measure international capital flows within tax haven and non-haven pairs. Hence, it represents a sum of portfolio investment from the  $i$ th non-haven country in a tax haven plus an investment from the same tax haven back in the  $i$ th non-haven country. In order to provide a robustness check for the results, every regression is run separately for both portfolio investment and FDI. Both Portfolio investment and FDI data are measured in millions of 2011 US dollars. Importantly, data on capital flows have an advantage of being relatively well available for a very high number of countries which suits the needs of our analysis.

- **GDP\_TH** represents 2011 GDP of the  $i$ th tax haven measured in billions of 2011 US dollars.
- **GDP\_non** stands for GDP of the  $i$ th non-haven country in 2011 measured in billions of 2011 US dollars.
- **Distance** represents mutual distance (in thousands of km) between the  $i$ th non-haven country and a tax haven the country invested in or received portfolio investment from, respectively. It also indicates the distance between a haven and a non-haven within the pairs. For further details on properties of data employed for variables please refer to Section 3.2.

In general, one can well expect to find relatively larger volumes of capital flows between countries at higher levels of economic performance. The higher the GDP, the larger the volume of the capital flows invested as well as investment received by a given country. Therefore, we expect the reported volumes of portfolio investment and FDI to be positively associated with GDP of both tax haven and non haven countries. On the other hand, the effect of mutual distance is anticipated to have a negative impact on both inbound and outbound capital flows.

## 3.4 Estimation Results

As briefly mentioned above, collected data were analyzed according to the direction of realized capital flows. Following this method, three samples were formed. Within the first sample, we studied volumes of portfolio investment and FDI, respectively, flowing from non-haven countries to those previously identified as tax havens. The second group comprises the data on capital flows from tax havens to non-havens, and the third studies the volumes of flows within pairs of haven - non-haven countries.

### 3.4.1 Capital Flows to Tax Havens

At first, we estimate the model with use of data for portfolio investment in tax havens. This is done by employing standard Ordinary Least Squares (OLS) procedure on a sample of 996 observations. All the estimations were performed in Stata11<sup>®</sup> software package. Before proceeding to the results we obtained it is important to examine the key assumptions of OLS estimation method. We will proceed according to Wooldridge (2008).

### OLS Assumptions

- (1) Obviously, Equation 3.1 is *linear* in parameters. Furthermore, it can be argued with certainty that none of our independent variables is constant nor an exact linear combination of the others. *Perfect collinearity* is not an issue here.
- (2) Based on computed correlation matrix reported in Table A.5 in Appendix A, we argue that none of the explanatory variables is correlated with the error term. Thus, we do not face a problem of an *endogenous* explanatory variable. We further hope to cover a well specified functional relationship. It is assumed that the error term has zero expected value so that the *zero conditional mean* assumption,  $E(u|x) = 0$ , is satisfied. Moreover, the nature of the OLS method implies that residuals obtained from the regression have zero mean.
- (3) In relation to the variance of residuals, we tested for homoskedasticity. Specifically, the homoskedasticity assumption requires the variance of residuals to be constant, thus  $Var(u|x) = \sigma^2$ . In order to decide whether the assumption holds, we performed a standard Breusch-Pagan test for heteroskedasticity. When carried out manually, the test first estimates the following regression:

$$\hat{u}^2 = \beta_0 + \beta_1 \text{GDP\_TH} + \beta_2 \text{GDP\_non} + \beta_3 \text{Distance} * \text{GDP\_non} + \text{error} \quad (3.2)$$

Where:

- $\hat{u}^2$  are the squared OLS residuals obtained from Equation 3.1.
- The explanatory variables are those used in the original model.

We are about to test the following hypotheses:

- (a)  $H_0 : \beta_1 = \beta_2 = \beta_3 = 0 \dots$  Homoskedasticity
- (b)  $H_1 : \neg H_0 \dots$  Heteroskedasticity

Associated testing statistic  $F(3, 962) = 28.39$  corresponds to a p-value very close to zero. It is caused by the nature of our data that we were forced to reject the null hypothesis of homoskedasticity, also written as  $H_0 : Var(u_i) = \sigma^2$ , on 1% significance level. Variance of residuals is thus

not constant since *heteroskedasticity* allows it to vary across individual observations. Therefore, we computed Huber-White heteroskedasticity robust standard errors which are hereafter always reported in parentheses.

- (4) The normality assumption,  $u \sim N(0, \sigma^2)$ , does not hold for our data. Normality of residuals assumes, among other requirements, that the variance of residuals is constant, which is not fulfilled here. Additionally, we performed Shapiro-Wilk test for normality concluding that the residuals are not normally distributed. The null hypothesis of normality  $H_0 : u \sim N(0, \sigma^2)$  was rejected on 1% level of significance as reported in Table A.2 in Appendix A.

Thus, our  $t$  and  $F$  statistics do not have exactly  $t$  and  $F$  distributions. However, we still hope to have unbiased and asymptotically normal estimators since our claims are supported by a considerably large sample size. In the same fashion, the OLS assumptions were checked for every of the following estimations. Since our data are generally very similar in nature the answers do not differ notably. Thereafter, we do not mention that discussion for the sake of brevity.

Table 3.3: Portfolio Investment in Tax Havens

Variable	Coefficient	(Std. Err.)
GDP_TH	6.232*	(2.479)
GDP_non	8.685**	(3.217)
Distance*GDP_non	-0.479†	(0.281)
Intercept	-3615.094	(2578.759)
N	966	
R <sup>2</sup>	0.148	
F <sub>(3,962)</sub>	3.394	
Significance levels : † : 10% * : 5% ** : 1%		

Results of the first regression are summarized in Table 3.3. According to our expectation, the volume of GDP generated by a tax haven seems to have a positive impact on the amount of portfolio investment received from a non-haven country. Furthermore, the positive impact of tax haven's GDP is statistically significant at 5% level. The other two coefficients are also reported with the anticipated signs. However, since there is an interaction term in our equation, we need to interpret the last two coefficients with a special care. Not surprisingly,

GDP level of a non-haven country is positively associated with capital flows routed to tax havens. This finding is statistically different from zero at 1% level. Nonetheless, the magnitude of the coefficient itself cannot be interpreted literally in our case as it requires countries' mutual distance to be equal to zero. Given the geographic conditions and due to the way our data on distances were computed, the minimum distance between tax haven and non-haven country in the sample equals to 59,6 km. It can be seen from Table 3.3 that the effect of mutual distance is indeed negative although marginally significant at 10% level.

The results suggest that, *ceteris paribus*, for two countries with approximately similar GDP levels the one which is located closer to a tax haven tends to route more investment in the tax haven in question than the more distant country. Moreover, 1000 km of an additional distance reduces total portfolio investment in tax havens by about USD 0.5 million for every USD billion of non-haven GDP. Hence, it follows that if there was a way for tax havens to foster the economic performance in other countries, tax havens might find it reasonable to promote non-haven countries in their close proximity which, in turn, would promise a higher capital inflow.

Table 3.4: FDI in Tax Havens

Variable	Coefficient	(Std. Err.)
GDP_TH	2.621**	(0.883)
GDP_non	6.933**	(2.492)
Distance*GDP_non	-0.400†	(0.222)
Intercept	-741.217	(1080.565)
N	1443	
R <sup>2</sup>	0.113	
F <sub>(3,1439)</sub>	5.353	
Significance levels : † : 10% * : 5% ** : 1%		

Consequently, the same regression was run with the important change being the use of FDI instead of portfolio investment. The results are presented in Table 3.4. Interestingly enough, using a large sample of 1443 observations, we argue that the same pattern described for portfolio investment applies also for FDI flows from non-haven to tax haven countries. GDP of both haven and non-haven countries turns out to be significant at 1% level. They preserve not only their positive signs but also the fact that the magnitude of coefficient on

non-haven GDP is larger again. In this case, the difference is considerable. The interaction term preserved its negative sign. Furthermore, it reached a very similar value indicating that every 1000 km of additional distance reduces the effect of non-haven GDP by about 6% ( $0.4/6.933$ ). As a result, FDI inflow into a tax haven is also reduced by the same fraction with increasing distance. We can conclude by saying that the formerly described pattern for portfolio investment is robust to employing the data on FDI. Nearby non-haven countries represent for tax havens important sources of capital flows.

### 3.4.2 Capital Flows from Tax Havens

Having dealt with capital flows to tax havens, we are about to study the private international investment flows in the opposite direction. Namely, we estimate our model using data on investment from tax havens in non-haven countries. Importantly, one can assume the coefficients to be driven by the same or similar forces and hence to preserve the formerly discussed signs. It is well justified to expect GDP of both tax haven and non-haven to play an important role and to be positively correlated with the volume of capital flows. Distance might be again negatively associated with realized international investment. As Table 3.5 reports, we obtained the results using a rich sample of 1668 observations. Heteroskedasticity robust standard errors are given in parentheses.

Table 3.5: Portfolio Investment from Tax Havens

Variable	Coefficient	(Std. Err.)
GDP_non	10.951**	(3.456)
GDP_TH	5.441*	(2.332)
Distance*GDP_non	-0.399	(0.401)
Intercept	-4584.719 <sup>†</sup>	(2565.227)
<hr/>		
N	1668	
R <sup>2</sup>	0.185	
F <sub>(3,1664)</sub>	5.089	
<hr/>		
Significance levels : † : 10% * : 5% ** : 1%		

In accordance with our expectations, both GDP variables' coefficients prove to be strongly significant and they also have positive signs. It is straightforward to note that for portfolio investment flowing from tax havens to adjacent non-haven countries GDP of the receiving country plays a considerably important



role. Interestingly, it is possible to argue the following. For two countries located in roughly the same distance from a tax haven we can expect the one with higher GDP to receive more portfolio investment inflows from a given tax haven. In other words, it can be understood that, other things being equal, developing countries which are more likely to have lower GDP levels tend also to obtain low volumes of capital flows from tax havens. The mutual distance seems again to have a negative impact on portfolio investment. However, with use of heteroskedasticity robust standard errors it turns out not to be statistically different from zero.

In order to inspect whether there is a similar pattern when different data are analyzed, we estimate the same regression for data on FDI. The outcomes are reported in Table 3.6. Is not difficult to see that the analysis of FDI data reveals partly different features. The insignificance of the interaction term does not seem to be robust to application of altered capital flows data. Interestingly, all the coefficients are now significant at least at 5% level. GDP which still serves as a proxy for an overall economic performance certainly plays an important role on both sides of international capital flows. In this case, both coefficients are even very similar in their magnitude. Other things being equal, additional USD 1 billion of tax haven GDP is associated with almost 6 million increase in FDI to non-haven countries. Again, if we consider countries at a similar distance from a given tax haven we observe that those with higher GDP levels are prone to receive relatively more capital investment.

Table 3.6: FDI from Tax Havens

Variable	Coefficient	(Std. Err.)
GDP_non	4.966**	(1.817)
GDP_TH	5.907*	(2.432)
Distance*GDP_non	-0.564*	(0.226)
Intercept	-1869.243	(1952.974)
N	536	
R <sup>2</sup>	0.153	
F (3,532)	3.371	
Significance levels : † : 10% * : 5% ** : 1%		

Furthermore, the interaction term provides us with a valuable interpretation. By every 1000 km of an additional distance the FDI inflow to non-haven country is, on average, reduced by about USD 0.5 million for every billion of

non-haven GDP. This way distance reduces the effect of non-haven GDP by about 11%. It follows that FDI flows from tax havens to non-havens are substantially more sensitive to changes in distance when compared to 6% for FDI inflows to tax havens.

### 3.4.3 Capital Flows within Tax Haven and Non-Haven Pairs

We have already paid attention to capital flows routed to tax havens as well as to international investment flowing from tax havens into non-haven countries. We analyzed them separately using data on portfolio investment and on FDI, respectively. At this point, we are about to follow the third possible way of using the above-mentioned data. We intend to work with haven and non-haven countries on a pair basis. Within the dataset of reported capital transactions, country pairs were formed to include countries which both invested in a tax haven and received a capital flow from the same tax haven. Unfortunately, this substantially reduces the sample of countries on our disposal. First, it is caused not only by the fact that some countries do not report volumes of their capital flows. The second important cause might be that tax havens are known to be intermediaries. Therefore, although correctly reported, tax havens may find it reasonable to route their capital flows to other countries than those they received investment from. Nonetheless, we still succeeded to compile a dataset of a sufficient size so that we eventually worked with samples of 673 and 286 observations for portfolio investment and FDI, respectively.

Table 3.7: Portfolio Investment - Haven and Non-Haven Pairs

Variable	Coefficient	(Std. Err.)
GDP_TH	16.905*	(6.746)
GDP_non	25.091**	(7.850)
Distance*GDP_non	-1.014	(0.827)
Intercept	-14221.710 <sup>†</sup>	(8492.150)
N	673	
R <sup>2</sup>	0.237	
F <sub>(3,669)</sub>	4.659	
Significance levels : † : 10% * : 5% ** : 1%		

We first run the regression explaining the sums of portfolio investment within pairs of individual havens and non-havens. Table 3.7 summarizes the

results we obtained. As in the previous cases, heteroskedasticity robust standard errors are reported in parentheses. We found strong GDP effects for both non-haven and tax haven economies. Corresponding coefficients on GDP are strongly significant with positive signs. Their size suggests that non-haven GDP plays a more important role when portfolio investment data are taken as sums for individual pairs. The interaction term yields a positive sign; however, with use of robust errors it proves to be highly insignificant. For portfolio investment data this is in line with findings which we revealed in the previous case.

Then, data on FDI were used to obtain sums of total FDI stock invested within individual haven and non-haven pairs. Estimation results are shown in Table 3.8. At first sight, one may observe that all the reported coefficients increased substantially when compared to previous FDI estimations. It is caused by the fact that data for inbound and outbound transactions were summed. Both GDP coefficients have positive signs and both are also significant at 1% level. One USD billion increase in tax haven GDP is, *ceteris paribus*, associated with USD 8.5 million increase in the sum of mutual capital flows. A considerably strong effect of non-haven GDP is substantially reduced by increasing distance. The interaction term turns out to be negative and significant at 5% level. Thus, 1000 km of distance is assumed to reduce inbound and outbound FDI by about USD 2 millions for every USD billion of non-haven GDP. This reduces the effect of non-haven GDP by almost 7%.

Table 3.8: FDI - Haven and Non-Haven Pairs

Variable	Coefficient	(Std. Err.)
GDP_TH	8.519**	(3.143)
GDP_non	28.611**	(10.276)
Distance*GDP_non	-1.891*	(0.808)
Intercept	-7032.533	(6934.547)
<hr/>		
N	286	
R <sup>2</sup>	0.251	
F <sub>(3,282)</sub>	5.624	
<hr/>		
Significance levels : † : 10% * : 5% ** : 1%		

As briefly mentioned above, there is no zero distance in any of our samples and therefore the value of GDP\_non coefficient cannot be interpreted literally. However, it is still possible to supply a valuable interpretation by plugging in

standardized values reported in Table 3.9 which provides us with descriptive statistics of *Distance* variable. These values were obtained from the sample of 286 observations used for the analysis of FDI flows within haven - non-haven pairs.

Table 3.9: Distance - Descriptive Statistics

<b>Distance</b>				(in thousands of km)
Lower Quartile	Median	Mean	Upper Quartile	
1.356	3.242	5.123	8.906	
<b>GDP Effect</b>				(in millions of USD)
26.046	22.48	18.923	11.769	

Data Source: Author's computation. Table in author's layout

One can easily observe that increasing distance negatively affects the positive effect caused by non-haven GDP. For a haven - non-haven pair located in the distance corresponding to the lower quartile, one billion of non-haven GDP increases the mutual FDI by about USD 26 million. At the mean distance, the effect lowers to roughly USD 19 millions. For a pair with a mutual distance corresponding to the upper quartile, an additional USD 1 billion of non-haven GDP is associated with an increase of FDI by about USD 12 million which accounts for less than a half when compared to the lower quartile distance. In accordance with the pattern we described for FDI flowing from tax havens, it follows that an increase of GDP in a distant non-haven country is accompanied by a relatively lower increase in capital inflows from tax havens.

### Capital Flows within the Pairs

By identifying the haven - non-haven pairs we actually revealed a broad group of non-haven countries which both routed a capital flow to a tax haven and received an investment flow from the very same country. We additionally performed the analysis on this group of countries without summing up inbound and outbound capital flows. Table 3.10 summarizes the results from the viewpoint of a non-haven country. In case of portfolio investment data, the coefficients for both outbound and inbound directions preserved their signs and significance as described earlier. Thus, we observe a usual pattern with the only insignificant coefficient being the one on the interaction term in the regression of portfolio

investment flowing from tax havens to non-haven countries. This finding also corresponds to our previous conclusions. In the second column of Table 3.10, one may note that capital flows received by non-haven countries are almost equally driven by haven and non-haven GDP.

Table 3.10: Portfolio Investment within Pairs

	Invested in THs		Received from THs	
GDP_TH	6.102*	(2.428)	10.807*	(4.511)
GDP_non	13.531**	(4.932)	11.564**	(4.185)
Distance*GDP_non	-0.779†	(0.425)	-0.235	(0.536)
Intercept	-6049.947	(3849.512)	-8171.892	(5211.976)
<i>N</i>	673		673	

Heteroskedasticity robust standard errors in parentheses

Significance levels : † : 10% \* : 5% \*\* : 1%

Afterwards, we again turn our attention to FDI data for the same group. The analysis does not bring any unexpected findings. On the contrary, the outcomes presented in Table 3.11 well confirm the conclusions made earlier. It is worth noticing that compared to Table 3.10 coefficients on the interaction terms presented for FDI are higher in absolute terms and, importantly, they are significant on 5% level.

Table 3.11: FDI within Pairs

	Invested in THs		Received from THs	
GDP_TH	6.902**	(2.426)	10.617**	(3.186)
GDP_non	15.635**	(5.810)	12.982*	(5.449)
Distance*GDP_non	-1.084*	(0.494)	-0.807*	(0.377)
Intercept	-2861.831	(3824.885)	-4170.803	(4094.866)
<i>N</i>	286		286	

Heteroskedasticity robust standard errors in parentheses

Significance levels : † : 10% \* : 5% \*\* : 1%

### 3.4.4 Discussion of Results

Throughout our analysis, we examined several aspects of international capital flows between tax havens and non-haven countries. The empirical study was carried out in an effort not only to outline a pattern applicable for our broad group of tax havens, but also to subsequently compare the results to those obtained by Hines (2010). As announced earlier, we employed slightly amended underlying data. Our distances were obtained based on a modified methodology. Further, data on capital flows and GDP are those reported for year-end 2011. A more detailed overview of data properties can be found in Section 3.2. At this point, we would like to summarize our results and discuss their overall relevance for a broader academic discourse.

In the first place, we agree with Hines's results regarding the effect of non-haven GDP. Our findings confirm that the overall size of non-haven economy plays a vital role. Thus, non-haven countries with high GDP volumes not only route more capital flows to tax havens, but receive also higher capital investment from havens. The associated coefficient was always strongly significant regardless of the type of data supplied or the direction of studied capital flows. Hence, we associate a USD 1 billion increase in non-haven GDP with an increase in capital flows to a nearby tax haven of about USD 8 million and 7 million for portfolio investment and FDI, respectively. This compares to the corresponding Hines's result of about USD 5 million increase. Furthermore, a USD 1 billion increase in non-haven GDP is accompanied by about USD 11 million and USD 5 million increase in capital flows received from a nearby tax haven, respectively for portfolio investment and FDI. Hines's result of almost USD 8 million increase in inbound portfolio investment lies in a similar range. However, as the distance between counterpart economies increases, the effect of non-haven GDP diminishes.

Indeed, the distance between countries was identified to have a non-negligible impact on volumes of mutual capital flows. Our findings suggest that tax havens are extraordinary capable of attracting international capital flows from nearby non-haven countries. One may argue that nearby non-havens represent for tax havens important sources of capital flows (Hines, 2010). However, there arises an uneasy question which concerns all potential kinds of economic activity these flows might be funded by. Similarly, non-havens in the close proximity are also seen to be major recipients of capital flows from tax havens. At the first sight, it might seem entirely favorable for countries to receive as much capital inflows

as possible. Yet, as long as we cannot be fully confident about legal origins of received capital flows we cannot accurately judge their ultimate desirability. Thus, a broader interpretation of capital flows both to and from tax havens ought to be perceived in this context.

As already mentioned, the intensity of FDI flows from havens to non-havens is highly likely to weaken with increasing mutual distance, though, we cannot support the same findings for portfolio investment by a reasonable statistical significance. Therefore, our results do not comply with Hines (2010) at this particular point. On the other hand, we agree with Hines's findings about distance with use of data on FDI. According to Hines (2010), the effect of mutual distance involves two major aspects. He argues that tax havens create a business-friendly environment in order to attract capital flows from non-haven countries located in their close proximity. However, he also expresses concerns by saying that there is a scope for possible data incompleteness. Allegedly, nearby transactions may be apt to be reported more precisely and they could, to some extent, bias the overall image of international capital flows. While accepting the latter, we find it difficult to acknowledge the former assertion. We are aware that tax havens represent an environment of relaxed regulation and favorable business terms. Therefore, they likely lure both licit and illicit economic activities. Of course, there certainly are considerable differences across individual tax havens. Some of them might thus provide more scope for activities which are against the law while other havens may truly enhance the legal economic activity.

A further comparison with the original model reveals opposing suggestions regarding the GDP produced by the individual tax havens. Our results propose that GDP level of a tax haven plays an important role for volumes of inbound and outbound capital flows. In every of the above-presented estimation, an increase in tax haven GDP was positively associated with higher volumes of capital flows. This finding turned out to be very robust and the inclusion of either FDI or portfolio investment data did not make any substantial difference. This challenges the result resented by Hines (2010) who argues that neither inbound nor outbound capital flows are affected by changes in tax haven GDP. Hence, the analysis performed on our broad group of tax havens advises that GDP levels of both non-havens and tax havens influence the international capital flows by positive driving forces that are rather similar in nature.

Within the scope of this thesis, we cannot hope to cover all the possible implications following from the existence of tax havens. In relation to our main

objective, academic literature outlines two contradictory lines of reasoning. Given the volumes of capital flows associated with tax havens, it seems likely that they affect functioning of other—non-haven—countries in a particular way. Although often inconclusive, hitherto presented findings are accompanied by a lively discussion. We concisely outline the flavor of two conflicting views.

Desai *et al.* (2004) employs a sample of American multinational companies finding out that firms are considerably more prone to locate their FDI into countries with low tax rates. By cutting their capital costs through the use of tax haven operations (see, Dyreng & Lindsey, 2009), companies are enabled to widen their foreign activities in nearby non-haven countries (Desai *et al.*, 2006a). One needs to take in account that it is often uneasy to ascertain the final destination of capital flows processed through tax havens as pointed out by Lane & Milesi-Ferretti (2010). However, the authors argue that such funds are not unlikely to be invested either in another foreign country or even reinvested in the domestic economy.

Another piece of a compatible evidence was delivered by Blanco & Rogers (2011) who claim that activities of tax havens are associated with generating positive spillovers which may be subsequently enjoyed by other countries. With a special emphasis on developing countries, the research presented by Blanco & Rogers (2011) concerns the effect of tax havens' existence on FDI inflows into non-haven countries. The authors argue to have found a strong agglomeration effect generated by tax havens. Typically, countries in the close proximity to tax havens receive more FDI inflows than those located far from havens. This finding lends support to similar conclusions drawn by Hines (2010) who states that tax havens keep facilitating economic growth in nearby non-haven countries by encouraging investment in their mostly high tax environments. In the same vein, Rose & Spiegel (2007) highlight the role played by geographical proximity. Accordingly, most advantages in the form of an increased investment and a higher competition in the financial sector are being enjoyed by countries located close to tax havens.

Quite on the contrary, some of those who have studied the issue carefully express serious concerns arguing that tax havens severely harm non-haven countries by negatively influencing not only their economic performance (see, *inter alia*, Oxfam, 2000; Gurtner, 2004; Christian Aid, 2009; Palan *et al.*, 2009; Shaxson, 2012). In this respect, Torvik (2009) points out that developing countries are especially vulnerable. As mentioned above, tax havens process a massive share of international capital flows. Based on our analysis, we observe that



relatively bigger tax havens process more capital flows than the small ones do, at least on average. The underlying data raise concerns of three types.

As Hines (2010) puts it, reported numbers may be viewed as large on one hand. On the other, they might be seen as not being large enough due to possible data misreporting. Having accounted not only for their volumes but also for a few sources of data incompleteness, we accept both concerns. Moreover, there is yet another aspect of possible misunderstanding. Namely, it is the very source of international investment. It is often overlooked that the engine which generates subsequent capital flows may vary substantially across individual economies. Perhaps, there may be perfectly legal capital flows accompanied by the illicit ones. As a secretive nature of this issue implies, one faces here a serious problem of data unavailability. Although there have been several attempts to estimate the extent of illegal capital flows (see, *inter alia*, Oxfam, 2000; Transparency International, 2004), they succeeded mainly in attracting the public attention. For instance, Fuest & Riedel (2010) challenge the reliability of the eye-catching estimates. The authors suggest interpreting such results with caution. Despite the questionable quality of data, we keep in mind that even much lower estimates would be alarming enough not to omit the existence of illicit capital flows resulting for instance from tax evasion, mispricing techniques, or drug trafficking. When overlooked, this dark side of international capital flows may foster a broad range of shady activities accompanied by various harming impacts.

Ultimately, the countries located close to tax havens most likely route more capital flows to as well as receive relatively more flows from tax havens. The volumes of capital flows seem to correspond to sizes of the counterpart economies. However, we admit that the evidence on a dominant positive or negative effect of tax havens on non-haven countries remains rather inconclusive based on the performed analysis of capital flows.

# Chapter 4

## Conclusion

This thesis was devoted to the omnipresent topic of tax haven countries. It elaborated on the fundamental paradigm of what a tax haven is determined by. In doing so, it substantially widened the perception of countries in question which resulted in a compilation of the list of tax havens. Subsequently, the listed group was employed in a succinct descriptive analysis with an emphasis on several widely-held perceptions associated with tax havens. After illustrating their tremendous significance we performed an empirical study in an effort to examine the effect of tax havens on non-haven countries. Throughout the thesis we aimed to preserve a rather descriptive work style.

First of all, we had to overcome the difficulty implied by the absence of a unique definition of tax haven. There are, indeed, no strictly outlined and generally accepted criteria under which a country qualifies to be a tax haven. We coped with this loophole by introducing an inclusive approach. Hence, we suggested extending the paradigm of *tax havens* in a flexible way. This thesis proposed including also countries which exhibit alike features even though they are usually not thought to be pure tax havens. Chapter 2 provided a comprehensive treatment by discussing the resemblances between several terms such as *OFC* or *Secrecy Jurisdiction*.

Having recognized substantial similarities we brought them together in the form of three fundamental building blocks underpinning the broader notion of tax havens. In addition to obvious tax requirements, we accounted specifically for an extensive provision of financial secrecy following primarily the research of FSI. Furthermore, we concentrated on the phenomenon of offshore financial services offered by numerous OFCs. In this context, we followed the research by Murphy (2009). As a result we presented a list of tax havens summarized

in Table 2.4. Although rather inclusive, we admit that this list might still be incomplete as we cannot hope to comprise all potentially suspicious countries. However, we believe it accommodates the vast majority of them.

In addition to the above discussed characteristics, tax havens exhibit also other observable similarities. We delivered a descriptive analysis of our group of tax havens. A lion's share of havens are countries small in size with a median one covering an area of merely 715 km<sup>2</sup>. However, when considering the size of tax havens, our list suggests that one should not limit their attention to small countries only. Similar logic applies also in terms of population. We found 38 tax havens with a population lower than one million. Yet, these havens combined represent merely 1.3% of tax havens' population. We noticed that 85% of tax havens have a direct approach to the sea. Moreover, 36 island havens accommodate 64% of tax haven's population while producing about 65% of tax havens' GDP. The aspect of island havens definitely matters even though islands account just for 32% of the area covered by tax havens. We found that tax havens grew faster over the studied period and that they tended to have relatively high GDP per capita.

After data completion, the empirical study was eventually carried out. We illustrated that tax havens process large amounts of international capital flows with a growing trend in their volumes. The analysis focused on the volumes of mutual capital flows between tax havens and non-haven countries. We found that the size of GDP of both tax havens and non-havens plays an important role. Our results suggest that the volumes of capital flows processed through a tax haven correspond to the size of its economy. Similarly, our findings lent support to the claim that countries with higher GDP volumes route more capital flows into tax havens and receive from them higher capital inflows. The positive effect of non-haven GDP is likely to be diminished by increasing the distance to a tax haven.

Eventually, we supported the view that the geographical distance matters even in the world of high capital mobility (Hines, 2010). Having compared our results with those obtained by Hines (2010), we repeatedly acknowledged their similar flavor in terms of numerical outcomes. In contrast to Hines, we claim that haven GDP also matters with regard to volumes of processed capital flows. More importantly still, we strongly suggest to interpret the results with caution, since an increased intensity of mutual capital flows is not necessarily accompanied by a higher level of economic prosperity. Hence, we conclude by acknowledging that there most probably are both positive and negative impacts

implied by the existence of tax havens, although the later are more difficult to account for. One should only praise their positive consequences while also properly accounting for their negative impacts as the overall influence of tax havens remains unclear.

# Bibliography

- ANTOINE, R.-M. B. (1999): "The Protection of Offshore Confidentiality: Policy Implications and Legal Trends." *Journal of Financial Crime* **7**: pp. 9–25.
- BLANCO, L. & C. ROGERS (2011): "Tax Havens and FDI Spillovers: Implications for LDCs." *Pepperdine University, School of Public Policy Working Papers* **21**: p. <http://digitalcommons.pepperdine.edu/sppworkingpapers/21>.
- CHRISTIAN AID (2009): "False Profits: Robbing the Poor to Keep the Rich Tax-free." *London, UK, Christian Aid* **I**: pp. <http://www.christianaid.org.uk/images/false-profits.pdf>.
- CIA (2009): "The World Factbook 2009." *Washington, DC: Central Intelligence Agency* pp. <https://www.cia.gov/library/publications/the-world-factbook>.
- DAVIDSON, S. (2007): "Here Is The Truth about Tax Havens." *The Age, Melbourne: Theage.com.au*. **I**: pp. <http://www.cis.org.au/media-information/opinion-pieces/article/517-here-is-the-truth-about-tax-havens>.
- DESAI, M. A., C. F. FOLEY, & J. HINES (2004): "Foreign direct investment in a world of multiple taxes." *Journal of Public Economics* **88(12)**: pp. 2727–2744.
- DESAI, M. A., C. F. FOLEY, & J. HINES (2006a): "Do tax havens divert economic activity?" *Economics Letters* **90(2)**: pp. 219–224.
- DESAI, M. A., C. F. FOLEY, & J. HINES (2006b): "The demand for tax haven operations." *Journal of Public Economics* **90(3)**: pp. 513–531.
- DHARMAPALA, D. (2008): "What Problems and Opportunities are Created by Tax Havens?" *Working Papers 0820*, Oxford University Centre for Business Taxation.

- DHARMAPALA, D. & J. R. HINES (2009): “Which countries become tax havens?” *Journal of Public Economics* **93(9-10)**: pp. 1058–1068.
- DIAMOND, W. & D. DIAMOND (2002): *Tax Havens of the World*. Number sv. 3 in Tax Havens of the World. M. Bender.
- DUNNING, J. (1981): “Explaining the international direct investment position of countries: Towards a dynamic or developmental approach.” *Review of World Economics (Weltwirtschaftliches Archiv)* **117(1)**: pp. 30–64.
- DYRENG, S. D. & B. P. LINDSEY (2009): “Using Financial Accounting Data to Examine the Effect of Foreign Operations Located in Tax Havens and Other Countries on U.S. Multinational Firms’ Tax Rates.” *Journal of Accounting Research* **47(5)**: pp. 1283–1316.
- EUROPEAN COMMISSION (2012): “EU Savings Tax Rules and Savings Agreements with Third Countries.” *MEMO-12-353, Brusel* pp. [http://europa.eu/rapid/press-release\\_MEMO-12-353\\_en.htm](http://europa.eu/rapid/press-release_MEMO-12-353_en.htm).
- FSI (2011): “Financial Secrecy Index.” *Tax Justice Network II*: p. <http://www.financialsecrecyindex.com/>.
- FUEST, C. & N. RIEDEL (2010): “Tax Evasion and Tax Avoidance in Developing Countries: The Role of International Profit Shifting.” *Working Papers 1012*, Oxford University Centre for Business Taxation.
- GAO (2008): “International Taxation, Large U.S. Corporations and Federal Contractors with Subsidiaries in Jurisdictions Listed as Tax Havens or Financial Privacy Jurisdictions.” *United States Government Accountability Office, Report to Congressional Requesters* p. <http://www.gao.gov/assets/290/284522.pdf>.
- GURTNER, B. (2004): “Tax Evasion: Hidden Billions for Development.” *Swiss Coalition of Development Organizations* p. <http://unpan1.un.org/intradoc/groups/public/documents>.
- HAMPTON, M. & J. CHRISTENSEN (2005): “Tax Us if You Can: The True Story of a Global Failure.” *Tax Justice Network, London* pp. 1 – 78.
- HEBOUS, S. (2011): “Money at the Docks of Tax Havens: A Guide.” *CESifo Working Paper Series 3587*, CESifo Group Munich.

- HINES, J. R. (2005): “Do Tax Havens Flourish?” *NBER Working Papers 10936*, National Bureau of Economic Research, Inc.
- HINES, J. R. (2010): “Treasure Islands.” *Journal of Economic Perspectives* **24(4)**: pp. 103–26.
- HINES, J. R. & E. M. RICE (1994): “Fiscal Paradise: Foreign Tax Havens and American Business.” *The Quarterly Journal of Economics* **109(1)**: pp. 149–82.
- HONG, Q. & M. SMART (2007): “In Praise of Tax Havens: International Tax Planning and Foreign Direct Investment.” *CESifo Working Paper Series 1942*, CESifo Group Munich.
- IMF (2000): “Offshore Financial Centers IMF Background Paper.” *Monetary and Exchange Affairs Department* p. <http://www.imf.org/external/np/mae/oshore/2000/eng/back.htm>.
- INCSR (2008): “International Narcotics Control Strategy Report: Drug and Chemical Control.” *United States Department of State, Bureau for International Narcotics and Law Enforcement Affairs I*: p. <http://www.state.gov/documents/organization/100890.pdf>.
- INCSR (2011): “Money Laundering and Financial Crimes Country Database.” *United States Department of State, Bureau for International Narcotics and Law Enforcement Affairs II*: p. <http://www.state.gov/j/inl/rls/nrcrpt/2012/database/>.
- KALSS, S., M. EISELSBERG, & J. ZOLLNER (2004): “Stiftungsland Österreich – Aktuelle Entwicklungen und Tendenzen.” *Hochschule für Rechtswissenschaft Institut für Stiftungsrecht und das Recht der Non-Profit-Organisationen* **16**: pp. [http://epub.sub.uni-hamburg.de/epub/volltexte/2012/15730/pdf/Discussion\\_Paper\\_Oesterreich.pdf](http://epub.sub.uni-hamburg.de/epub/volltexte/2012/15730/pdf/Discussion_Paper_Oesterreich.pdf).
- LANE, P. R. & G. M. MILESI-FERRETTI (2010): “Cross-Border Investment in Small International Financial Centers.” *CEPR Discussion Papers 7694*, C.E.P.R. Discussion Papers.
- MAYER, T. & S. ZIGNAGO (2006): “Notes on CEPII’s distances measures.” *MPRA Paper 26469*, University Library of Munich, Germany.
- MCCANN, H. (2006): *Offshore Finance*. Cambridge University Press.

- MURPHY, R. (2009): "Where are the world's secrecy jurisdictions?" *Tax Justice Network* p. <http://www.secrecyjurisdictions.com/>.
- OECD (1998): "Harmful Tax Competition: An Emerging Global Issue." *Organisation for Economic Cooperation and Development, Paris I*: p. <http://www.oecd.org/tax/transparency/44430243.pdf>.
- OTT, M. (2008): "International capital flows." *The Concise Encyclopedia of Economics*, [www.econlib.org/library/Enc/InternationalCapitalFlows.html](http://www.econlib.org/library/Enc/InternationalCapitalFlows.html) .
- OXFAM (2000): "Tax Havens: Releasing the Hidden Billions for Poverty Eradication." *London, UK* p. <http://www.taxjustice.net>.
- PALAN, R., R. MURPHY, & C. CHAVAGNEUX (2009): *Tax havens: how globalization really works*. Cornell Studies in Money Series. PLYMBRIDGE DISTRIBUTORS Limited.
- PICARD, P. M. & P. PIERETTI (2008): "Bank Secrecy, Illicit Money and Offshore Financial Centers." *CREA Discussion Paper Series 08-18*, Center for Research in Economic Analysis, University of Luxembourg.
- ROSE, A. & M. SPIEGEL (2007): "Offshore Financial Centres: Parasites or Symbionts?" *Economic Journal* **117(523)**: pp. 1310–1335.
- SHAXSON, N. (2012): *Treasure Islands: Tax Havens and the Men Who Stole the World*. Vintage Books. Random House of Canada, Limited.
- SLEMROD, J. & J. D. WILSON (2009): "Tax competition with parasitic tax havens." *Journal of Public Economics* **93(11-12)**: pp. 1261–1270.
- THOMPSON, F., T. STEVENS, S. M. COLLINS, & G. M. VOINOVITHCH (2001): "Correspondent Banking: A Gateway for Money Laundering." *Permanent Subcommittee on Investigations of the Committee on Governmental Affairs, United States Senate* pp. <http://www.imolin.org/pdf/imolin/CPRT-107SPRT69919.pdf>.
- TJN (2011): "What is a secrecy jurisdiction." *Tax Justice Network* p. <http://www.financialsecrecyindex.com/documents/WhatIsASecrecyJurisdiction.pdf>.
- TJN, T. J. (2007): "Identifying Tax Havens and Offshore Finance Centres." *Tax Justice Network* p. [http://www.taxjustice.net/cms/upload/pdf/Identifying\\_Tax\\_Havens\\_Jul\\_07.pdf](http://www.taxjustice.net/cms/upload/pdf/Identifying_Tax_Havens_Jul_07.pdf).



- TORVIK, R. (2009): “Why are tax havens more harmful to developing countries than to other countries?” *Memorandum written for the Commission to the Government Commission on Tax Havens* p. [http://www.regjeringen.no/upload/UD/Vedlegg/Utvikling/tax\\_report.pdf](http://www.regjeringen.no/upload/UD/Vedlegg/Utvikling/tax_report.pdf).
- TRANSPARENCY INTERNATIONAL (2004): “Global corruption report 2004.” *Pluto Press, London* p. [www.globalcorruptionreport.org](http://www.globalcorruptionreport.org).
- WOOLDRIDGE, J. M. (2008): *Introductory Econometrics - A modern approach*. Cengage Learning Emea, 4 edition.
- ZOROMÉ, A. (2007): “Concept of Offshore Financial Centers: In Search of an Operational Definition.” *IMF Working Papers 07/87*, International Monetary Fund.

# Appendix A

## Tables

Table A.1: Covered Lists of Tax Havens - Chronological Overview

Lists of Tax Havens - Overview		Year
1.	International Bureau of Fiscal Documentation	1977
2.	Charles Irish, academic paper	1982
3.	Hines and Rice, academic paper	1994
4.	Fiscal Stability Forum	2000
5.	International Monetary Fund	2000
6.	OECD	2000
7.	Financial Action Task Force	2000
8.	Hampton and Christensen	2005
9.	Zorome, academic parer for IMF	2007
10.	Senator Carl Levin, Stop Tax Haven Abuse Act	2007
11.	lowtax.net	2008

Data Source: Murphy 2009, Table in author's layout

Table A.2: Shapiro - Wilk Test for Normality

Variable	Obs	W	V	z	P-value
Residuals	966	0.3034	425.693	14.970	0.00001

Note: Shapiro-Wilk test associated with regression summarized in Table 3.3.

Table A.3: Tax Havens - Number of Listings

Country	Nr. of Listings	(n= 61)	
Bahamas	11	Bahrain	7
Bermuda	11	Costa Rica	7
Cayman Islands	11	Marshall Islands	7
Guernsey	11	Mauritius	7
Jersey	11	St Lucia	7
Malta	11	Aruba	6
Panama	11	Dominica	6
Barbados	10	Liberia	6
British Virgin Islands	10	Samoa	6
Cyprus	10	Seychelles	6
Isle of Man	10	Lebanon	5
Liechtenstein	10	Niue	5
Netherlands Antilles	10	Macau	4
Vanuatu	10	Malaysia	4
Gibraltar	9	Montserrat	4
Hong Kong	9	Maldives	3
Singapore	9	United Kingdom	3
St Vincent and Grenadines	9	Brunei	2
Switzerland	9	Dubai	2
Turks and Caicos Islands	9	Hungary	2
Antigua and Barbuda	8	Israel	2
Belize	8	Latvia	2
Cook Islands	8	Madeira	2
Grenada	8	Netherlands	2
Ireland	8	Philippines	2
Luxembourg	8	South Africa	2
Monaco	8	Tonga	2
Nauru	8	Uruguay	2
St Kitts and Nevis	8	US Virgin Islands	2
Andorra	7	USA	2
Anguilla	7		

Note: Listing method - number of listings for individual countries qualified as tax havens. Source of data: Murphy (2009). Table in Author's layout.

Table A.4: Secrecy Scores Higher than 60 Points

Country	Score		(n = 53)
Maldives	92		
Turks and Caicos	90	San Marino	79
Marshall Islands	90	Botswana	79
Belize	90	Jersey	78
St Lucia	89	Gibraltar	78
Vanuatu	88	Switzerland	78
Seychelles	88	Uruguay	78
Montserrat	86	St Vincent and Grenadines	78
Bermuda	85	Bahrain	78
Samoa	85	Cayman Islands	77
Brunei	84	Malaysia	77
Macao	83	Panama	77
Netherlands Antilles	83	Costa Rica	77
Bahamas	83	Cook Islands	75
Grenada	83	Monaco	75
Lebanon	82	Aruba	74
Antigua and Barbuda	82	Mauritius	74
British Virgin Islands	81	Philippines	73
St Kitts and Nevis	81	Hong Kong	73
Liberia	81	Andorra	73
Liechtenstein	81	Singapore	71
Guatemala	81	Luxembourg	68
Dominica	80	US Virgin Islands	68
Anguilla	79	Austria	66
United Arab Emirates	79	Guernsey	65
Ghana	79	Isle of Man	65
Barbados	79	Japan	64

Data Source: Financial Secrecy Index 2011. Table in author's layout.

Note: Jurisdictions with secrecy score higher than 60 points.

Table A.5: Correlation Matrix

	<b>GDP_non</b>	<b>GDP_TH</b>	<b>Dist*non</b>	<b>Residuals</b>
<b>GDP_non</b>	1.0000			
<b>GDP_TH</b>	-0.0589	1.0000		
<b>Dist*non</b>	0.8362	-0.0254	1.0000	
<b>Residuals</b>	0.0000	0.0000	0.0000	1.0000

Note: Correlation matrix associated with the regression reported in Table 3.3. Dist\*non stands for the abbreviation of interaction term Distance\*GDP\_non.

Table A.6: Island Havens

<b>Tax Havens Located Primarily on Islands</b>		
Anguilla	Grenada	Netherlands Antilles
Antigua and Barbuda	Guernsey	Philippines
Aruba	Ireland	Samoa
Bahamas	Isle of Man	Seychelles
Bahrain	Japan	Singapore
Barbados	Jersey	St Kitts and Nevis
Bermuda	Maldives	Saint Lucia
British Virgin Islands	Malta	St Vincent and Grenadines
Cayman Islands	Marshall Islands	Turks and Caicos
Cook Islands	Mauritius	United Kingdom
Cyprus	Montserrat	US Virgin Islands
Dominica	Nauru	Vanuatu

Note: List of tax havens with majority of population settled on at least one island.

Data Source: The World Factbook by CIA. Table in author's layout.

Table A.7:  
Inbound Portfolio Investment

Country	2001	2006	2011
United Kingdom	1,289,876	3,230,085	3,469,123
Cayman Islands	416,538	1,423,135	1,908,472
Luxembourg	525,324	1,735,411	1,879,872
Netherlands	705,536	1,534,760	1,846,944
Japan	540,800	1,452,132	1,437,634
Ireland	177,597	1,009,619	1,089,965
Switzerland	218,587	603,080	632,591
Austria	117,085	348,240	415,978
Belgium	155,710	371,666	394,580
Bermuda	170,828	377,949	360,486
Hong Kong	96,700	238,616	283,541
Jersey	39,874	243,553	208,804
Singapore	50,693	128,654	171,658
Netherlands Antilles	64,356	160,558	121,963
Malaysia	22,551	60,258	118,235
British Virgin Islands	14,456	61,266	97,986
Guernsey	14,572	66,946	81,257
Israel	26,657	57,033	78,402
Hungary	16,026	63,236	50,048
Philippines	12,947	32,015	49,244
<b>Total</b>	<b>4,676,716</b>	<b>13,198,211</b>	<b>14,696,783</b>

Note: Top 20 tax haven receivers of portfolio investment as ordered at year-end 2011, in millions of US dollars. The table captures the development in 5-years steps over the last decade. Data source for portfolio investment liabilities: IMF, Coordinated Portfolio Investment Survey (CPIS).

Table A.8:  
Outbound Portfolio Investment

Country	2001	2006	2011
Japan	1,289,749	2,343,482	3,375,244
United Kingdom	1,304,044	3,140,509	3,219,158
Luxembourg	820,614	2,430,920	2,670,504
Ireland	432,839	1,620,218	1,854,040
Netherlands	485,669	1,327,585	1,430,193
Switzerland	490,589	896,372	1,084,613
Hong Kong	205,600	580,552	817,818
Singapore	112,285	377,822	770,427
Belgium	280,426	676,551	666,521
Bermuda	162,433	448,661	460,362
Austria	112,457	352,400	316,839
Jersey	103,660	357,692	219,389
Guernsey	67,486	183,731	214,316
Mauritius	584	81,550	128,886
Israel	7,722	35,715	61,001
Cayman Islands	50,817	82,194	51,112
Isle of Man	28,947	47,787	40,565
Malaysia	2,279	7,188	40,290
Cyprus	3,869	27,033	37,591
Bahrain	15,280	39,572	28,929
<b>Total</b>	<b>5,977,351</b>	<b>15,057,532</b>	<b>17,487,799</b>

Note: Top 20 tax havens ordered according to volumes of portfolio investment assets at year-end 2011, in millions of US dollars. The table captures the development in 5-years steps over the last decade. Data source for portfolio investment assets: IMF, Coordinated Portfolio Investment Survey (CPIS).

Table A.9: Summary Statistics - Portfolio Investment

<b>To THs</b>							
<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q25</b>	<b>Median</b>	<b>Q75</b>	<b>Max</b>
Invested	8391.194	50696.37	0.000188	4.876139	63.70348	804.1052	989273
GDP_non	1092.472	2384.588	14.02617	188.05	333.616	1153.343	14991.3
GDP_TH	231.3021	839.3213	0.1737	1.53983	7.787514	59.20083	5867.154
Distance	6.243261	4.36946	0.059617	2.024164	6.143293	9.218735	19.21788
<b>From THs</b>							
<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q25</b>	<b>Median</b>	<b>Q75</b>	<b>Max</b>
Invested	11043.96	46169.27	1.77E-06	4.52682	44	464.4778	1168353
GDP_non	477.7307	1612.098	0.165517	12.85645	55.37166	247.4356	14991.3
GDP_TH	385.4972	1082.002	1	7.787514	40.09433	242.9287	5867.154
distance	6.471208	4.398357	0.059617	2.318997	6.213992	9.279762	19.6295
<b>In pairs</b>							
<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q25</b>	<b>Median</b>	<b>Q75</b>	<b>Max</b>
Invested	41415.2	123331.8	0.062828	114.2744	789.6761	6789.412	1856314
GDP_non	1092.472	2384.588	14.02617	188.05	333.616	1153.343	14991.3
GDP_TH	374.2208	1067.508	1	6.270317	38.26139	242.1214	5867.154
Distance	5.572851	4.350973	0.059617	1.651582	4.824977	8.980642	19.14714

Note: *Invested* in millions of US dollars. *GDP* in billions of US dollars. *Distance* in thousands of km. Author's computation and layout.



Table A.10: Summary Statistics - FDI

<b>To THs</b>							
<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q25</b>	<b>Median</b>	<b>Q75</b>	<b>Max</b>
Invested	5489.426	32787.9	2.22E-05	5.246048	74.05224	879.74	856758.4
GDP_non	973.1411	2320.085	5.698598	50.01391	220.2556	846.1418	15120.72
GDP_TH	378.2199	871.4878	0.05544	1.183543	8.933106	59.61075	5832.184
distance	6.400129	4.39799	0.059617	2.209471	6.079042	9.415122	19.17559
<b>From THs</b>							
<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q25</b>	<b>Median</b>	<b>Q75</b>	<b>Max</b>
Invested	8133.075	42550.15	0.0025	8.729867	113.0349	1479.336	693801.1
GDP_non	558.2471	1741.5	0.24776	13.76664	68.84921	331.1759	15120.72
GDP_TH	494.6692	1242.676	0.684366	22.91446	99.75449	260.2258	5832.184
Distance	5.952469	4.621262	0.059617	1.712178	5.114018	9.468364	19.14714
<b>In pairs</b>							
<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q25</b>	<b>Median</b>	<b>Q75</b>	<b>Max</b>
Invested	46263.43	113677.3	0.268066	456.8735	3034.663	16923.47	1232286
GDP_non	1310.171	2491.34	6.996802	63.42412	265.2862	1150.016	15120.72
GDP_TH	539.4812	1290.763	1.046589	28.89166	180.0769	271.6801	5832.184
Distance	5.123974	4.404614	0.059617	1.35645	3.242055	8.906022	18.54961

Note: *Invested* in millions of US dollars. *GDP* in billions of US dollars. *Distance* in thousands of km. Author's computation and layout.

# Bachelor Thesis Proposal

---

<b>Author</b>	Ondřej Filip
<b>Supervisor</b>	Petr Janský, M.Sc.
<b>Proposed topic</b>	Treasure Islands: The Economic Analysis of Tax Havens

---

**Preliminary thesis content** This bachelor thesis is devoted to the phenomenon of tax havens, also referred to as offshore financial centers or secrecy jurisdictions. These countries are, in public opinion, often associated with various concerns such as tax evasion, money laundering, attracting international investment or excessive tax competition. On the other hand, it is argued (Rose & Spiegel, 2007; Blanco & Rogers, 2011) that tax havens provide also positive influence. For instance, they are assumed to foster economic performance in other countries.

The fundamental motivation for this thesis is to analyze how tax havens influence other countries in terms of economic activity. The thesis is aimed to focus substantially on the research presented in 2010 by James R. Hines Jr. in his paper named Treasure Islands. We intend to review this paper and provide a critical view while extending the notion of tax havens also on larger countries. We aim to illustrate the significance of the role played by tax havens on and beyond the global economic scene.

Towards this aim, we intend to employ a regression explaining the volumes of international investment (both in and from tax havens) by means of the distance to a tax haven, its GDP and GDP of a non-haven country as suggested by Hines (2010). We intend to perform our analysis based on publicly available data from the International Monetary Fund, The World Factbook by CIA, and The World Bank. For data on mutual distances we will refer to Mayer & Zignago (2006).

**Předběžná náplň práce** Tato bakalářská práce je věnována tématu daňových rájů, také nazývaných offshorová finanční centra nebo secrecy jurisdictions.

Tyto země jsou ve veřejném mínění často spojovány s různými obavami jako například daňové úniky, praní špinavých peněz, přilákávání zahraničních investic nebo nadměrná daňová konkurence. Často se však také tvrdí (Rose & Spiegel, 2007; Blanco & Rogers, 2011), že daňové ráje mají pozitivní vliv na úroveň ekonomické aktivity v ostatních zemích. Základní motivací pro tuto práci je analyzovat, jakým způsobem daňové ráje ovlivňují ostatní země ve smyslu ekonomické aktivity. Práce se podstatným způsobem zaměří na výzkum představený v roce 2010 Jamesem R. Hinesem Jr. v článku nazvaném *Treasure Islands*. Máme v úmyslu zaměřit se revizi tohoto článku a poskytnout kritičtější pohled za rozšíření pojmu daňového ráje také na větší země. Chtěli bychom ilustrovat významnost role, kterou daňové ráje hrají na světové ekonomické scéně i mimo ni. Za tímto účelem chceme zapojit regresi, která bude vysvětlovat objemy mezinárodních investic (do a z daňových rájů) za pomoci vzdálenosti do daňového ráje, HDP daňového ráje a HDP země, která není daňovým rájem. Tento přístup navrhl Hines (2010). Pro analýzu plánujeme využít veřejně dostupná data od Mezinárodního měnového fondu, *The World Factbook* od CIA a data od Světové banky. Data na vzájemné vzdálenosti zemí budeme čerpat z Mayer & Zignago (2006).

## Outline

1. Introduction
2. On the definition of a tax haven
3. Empirical study
4. Conclusion

## Core bibliography

1. DESAI, M. A., FOLEY F., & HINES, J. R. Jr. (2006a): "Do Tax Havens Divert Economic Activity?", *Economics Letters*, 90(2): 219–24.
2. DESAI, M. A., FOLEY F., & HINES, J. R. Jr. (2006b): "The Demand for Tax Haven Operations", *Journal of Public Economics*, 90(3): 513–31.
3. HINES, J. R. Jr. (2010): "Treasure Islands." *Journal of Economic Perspectives, American Economic Association*, vol. 24(4): pp. 103-26, Fall.
4. DHARMAPALA, DHAMMIKA, & HINES, J. R. Jr. (2009): "Which Countries Become Tax Havens?" *Journal of Public Economics*, 93(9–10): 1058–68.
5. ROSE, A. K. & SPIEGEL, M. M. (2007): "Offshore Financial Centres: Parasites or Symbionts?" *Economic Journal*, 117(523): 1310–35.