



# The obscure truth about governance quality and tax havens

*An empirical analysis of the effect of governance and institutional quality on the financial  
secrecy index*

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## Abstract

This thesis aims to clarify the obscure perception about tax havens being well-governed countries. Empirical studies on tax havens usually take a dichotomous approach whereby a jurisdiction is either a tax haven or not. We argue that this approach is of little value considering there is no common and overall accepted definition of tax havens. Previous literature has given too much attention to small and insignificant tax havens, while large economies have gone unnoticed. We challenge the dichotomous approach and contribute to the tax haven literature using the Financial Secrecy Index as our dependent variable. With this new measure, we turn to examine the determinants of tax haven status, and we do not find a significant and identifiable chain of causation for the relationship between tax haven status and governance quality. Thus, we can disprove some of the findings from Dharmapala and Hines (2009), regarded by many as the most influential evidence on the relationship between governance and tax havens. However, we find supporting evidence for a low degree of corruption as important for tax haven status. This finding suggests that tax havens' credibility to attract financial capital is closely attached to a low degree of corruption, at least on paper. Finally, evidence shows that large developed economies with oversized financial centers suffer from the country capture phenomenon. Rather than serving the economy, large financial centers now prey on it, eventually undermining governance and institutional quality.

**Keywords** - Tax Havens, Governance Quality, Institutions, Financial Secrecy Index, Corruption, Country Capture.

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# 1 Introduction

In light of the global financial crisis of 2008 and the disclosure of the Panama papers in 2016, the world has awoken to the sobering facts regarding the impact tax havens impose on the world economy. Tax havens alone are estimated to be responsible for the loss of approximately US 500-600 billion dollars of tax revenue a year (Shaxson, 2019). While the issue is more prominent in developing countries, the United States and the United Kingdom are also subjected to negative externalities from tax havens. However, the public has a confused understanding of tax havens today. In fact, according to Cobham et al. (2015), the United Kingdom is the most detrimental tax haven in the world with all of its overseas territories and dependencies. While the general view of tax havens' destructive consequences seems to be similar, it continues to be quite vague what characterizes a tax haven and which nations have become tax havens. This is where our research comes into play, attempting to clarify the determinants on which countries become tax havens.

The literature is primarily focused on cross-sectional data and dichotomous reasoning, where most of the literature is based on a list of tax havens created by Hines and Rice (1994). We argue that such a dichotomous approach is of little value, given that no standard and generally accepted definition of tax havens exists and that since 1994, the number of tax havens has expanded. Therefore, we use the Financial Secrecy Index<sup>1</sup>, which incorporates a qualitative institutional indicator and a measure of a nation's share of the global market for financial services provided to non-residents. A continuous measure of secrecy and tax haven status is therefore obtained, which can possibly provide better recognition as the question is re-examined: what makes a tax haven?

A significant positive correlation between governance quality and tax haven status is found in previous literature on tax haven determinants. Dharmapala and Hines (2009), henceforth DH2009, have contributed the most to tax haven literature and claims that tax havens are small, affluent island economies with a substantial service sector and less natural resources than nonhavens.<sup>2</sup> This is, in our opinion, an outdated perception regarding tax havens and does not accurately represent the reality.

We argue that it is the large and seemingly "clean" countries that are the worst tax havens and that the significant positive relationship between governance and the classification of tax havens is incorrect. This assertion is supported by the Tax Justice Network, which in its latest edition of the Financial Secrecy Index has revealed a certain confused perception of tax havens. According to the Tax Justice Network (2020a), privileged OECD member countries and their satellites are the key beneficiaries or conductors of these legal and illegal flows.

Furthermore, we suspect that tax havens have become victims of an aggressive financial sector, with the ability to relocate their mobile capital almost instantly. Thus, leading to mobile capital holders obtaining an edge on tax haven governments. This is because tax havens will only reap the advantages of mobile capital that they cannot reap as nonhavens or when not selected as the favored tax haven. We think this contributes to some handshake deals that are more consistent with a society that is politically and economically captured. Where according to Shaxson and Christensen (2013), a politically and economically captured jurisdiction is easily manipulated by lobbyists, and where the excessive financial sector dismantles other sectors, thus ruining the marketplace for other industries. Consequently, we presume that the double-

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<sup>1</sup>The Financial Secrecy Index and the FSI value will be used interchangeably in the thesis.

<sup>2</sup>DH2009 claims that these characteristics of tax havens are well-documented in the literature.

edged stability criterion<sup>3</sup> is essential in any tax haven. This implies that tax havens must appear to be stable and well regulated. Otherwise, mobile capital holders would relocate. However, the finance sector must also be protected from government scrutiny, thus ensuring that global mobile capital holders are anonymous. This entails that tax havens have to turn a blind eye to certain transactions or activities that occur, which is not compatible with being characterized as a well-governed country. Overall, it seems that such a government has to be relatively pliable in order to attract and retain mobile capital within the jurisdiction.

To test our theory, we first replicated DH2009 main results with 2004 data. Subsequently, we used the same approach with recent data from 2019. We then used a continuous measure of secrecy, where the Financial Secrecy Index value and the secrecy score are employed as dependent variables. To measure the effect of time-variant variables, we applied a fixed effects regression and used panel data. In particular, we wanted to measure governance over time, thus tax haven status, since the level of governance is obviously changing over time with natural election cycles. We also generated a fixed effects model for our panel data due to the possibility of omitted variables associated with tax haven status and governance in our model.

In particular, if extended to more recent data, the association found by DH2009 is no longer present, with neither ordinary least squares (OLS) or a fixed effects model. However, we find that corruption is positively correlated with the Financial Secrecy Index and thereby, able to confirm DH2009 findings in regards to how local corruption affects tax haven likelihood. We interpret this as evidence that in order to attract financial capital, countries have to commit not to expropriate foreign investors.<sup>4</sup>

Nonetheless, there is one potential issue with the significant positive relationship we find between the Financial Secrecy Index and the Corruption Perceptions Index (CPI). Specifically, traditional indexes such as the CPI are focused on experts' opinions, usually professors, major business executives, and government individuals. Because perceptions are not inherently factual, but rather viewpoints of certain individuals, these typically vary among various classes in a population. Therefore, only collecting answers from one group leads to a potential selection bias in the index. Since we believe that tax havens may suffer from economic and political capture, the CPI is potentially exaggerated because governments in tax havens are aware that a perceived impression of low corruption impacts the inflow of mobile capital. Thus we cannot guarantee that the levels of corruption the CPI shows is an accurate picture of the reality. Throughout the thesis, we show convincing examples of an overly excessive financial sector's impact on a government and clearly show that a major tax haven like Jersey seems to have a misleadingly low score on corruption.<sup>5</sup>

Our findings in this thesis shows no positive association between the quality of governance and tax haven status, which contradicts popular literature. However, we argue that even if the governance index had become significant, it would have captured too much of the local conditions, which is not inherently important considering tax haven status. It is the treatment of foreign mobile capital holders that is key, not the local circumstances, considering tax haven status. However, make no mistake, in order to create a favorable environment for foreign mobile capital investors, a certain degree of governance clearly needs to be in place. Nonetheless, we argue that it is misleading to suggest that a constant increase in local governance should

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<sup>3</sup>The double-edged stability requirement by Shaxson and Christensen (2013) implies that "financial centers need stability and the appearance of probity, or the money will flee." This alongside a reassurance that the local government will not interfere and hinder the financial sector's needs.

<sup>4</sup>The fact that foreign direct investment (FDI) inflows are reduced as corruption rises is well established in the literature.

<sup>5</sup>The CPI does not measure the corruption in Jersey, but Kaufmann and Kray (2019) report a score for Channel Islands on corruption. The Channel Islands consists of Bailiwick of Jersey and the Bailiwick of Guernsey, these two separate units are treated as one due to restricted data availability.

have a favorable effect on tax haven status. Henry (2012) puts it in perspective, “we will not steal your money - but we won’t kick up a fuss if you steal other people’s money.” This highlights that tax havens only have to create an efficient and trustworthy ring-fenced legislation<sup>6</sup> to attract foreign mobile capital. And currently, portraying the image of having low levels of local corruption seems to be the only aspect of institutions that impacts tax haven status.

Section 2 of this thesis describe the data we have applied in the forthcoming analysis. Section 3 shows the regression techniques we apply. Section 4 analyses how governance and other institutional measures affect tax havens. Section 5 contains a discussion where we propose an alternative hypothesis into what makes a tax haven. Section 6 concludes.

## 1.1 Theoretical background

The connection between governance and institutional quality to the probability of a country becoming a tax haven is explored in several research studies. In empirical research, it seems to be a common perception that tax havens are well-governed countries since otherwise, tax havens would not be able to attract foreign mobile capital. The most influential studies on the topic are arguably DH2009, but Rose and Spigel (2007) have also contributed to the literature. DH2009 uses a dichotomous approach that classifies a nation as a tax haven or not and applies cross-sectional data to analyze how governance quality affects tax haven status. Their findings suggest that governance quality is crucial for a country trying to attract capital and become a tax haven. Finally, they conclude that tax havens are small affluent countries with high-quality governance institutions. Rose and Spigel (2007) used the governance index components to investigate the determinants of tax havens. They found no significant relationship between tax haven status and political stability, nor the rule of law. However, they find evidence for regulatory quality being crucial for a country to become a tax haven.

DH2009 and Rose and Spigel (2007) give too much attention to small insignificant tax havens in their empirical research, while large tax havens like the United States are overlooked. We challenge this approach and contribute to the tax haven literature by using the Financial Secrecy Index as our dependent variable of interest when examining the determinants of tax havens. Furthermore, we use fixed effects regression on panel data to control for unobservable time-specific and individual effects. This allows us to control for omitted variable bias in a more precise manner, compared to the cross-sectional study done by DH2009.<sup>7</sup>

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<sup>6</sup>Ring-fencing is a system where separate rules and laws apply to non-residents (Schjelderup, 2015).

<sup>7</sup>Section 4.2 provides a deeper insight into possible issues in utilizing cross-sectional data and ensuring causal inferences for the relationship between governance quality and tax havens.



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## 2 Data

In this section, we describe our data and descriptive evidence. Data sources and a complete list of all variables are provided in appendix A.

### 2.1 Tax havens

Tax havens are jurisdictions that offer favorable terms for wealthy individuals, criminals, and corporations. There are no clear cut definitions for tax havens, and names like offshore financial center and secrecy jurisdictions are used interchangeably. In the tax haven literature, tax havens are generally described as low, or nil tax environments with low transparency, which is often referred to as secrecy or private information, and no requirement of local presence (Schjelderup, 2015). Increased attention has recently been given to low transparency among tax havens, particularly after the disclosure of Panama papers in April 2016, which leaked information about more than 214,488 offshore companies.

The business model of tax havens is to construct complex legal regimes to empower secrecy. Nonetheless, the objective is relatively simple - companies such as banks and other financial institutions are allowed to accept capital from anywhere, without disclosing any information about its origin (Global Financial Integrity, 2019). Without any obligations to disclose this information, tax havens are ideal for anyone in need of somewhere to hide capital. Thus, tax havens are the perfect place for criminals, as banks will accept their “dirty” money without asking too many questions.

Numerous multinational firms use tax havens to lower their tax-bill. This is known as tax avoidance and compared to tax-evasion, it is legal. By using complicated corporate structures involving holding companies and lawyers, loopholes are utilized - shifting profits to tax havens. The most well-known tax evasion tactic is “the double Irish Dutch sandwich” formerly employed by Google’s European headquarters in Ireland, which used a holding company in the Netherlands to move profits to Bermuda.

To examine the determinants of tax havens, three dependent variables are applied. The first variable is tax haven status, which is a binary variable, that is based on the predefined list of tax havens used by DH2009.<sup>8</sup> The second variable is the Financial Secrecy Index, our primary variable of interest in this thesis. Lastly, the secrecy score is applied, which is a sub-component of the Financial Secrecy Index.

#### 2.1.1 Financial Secrecy Index

The Financial Secrecy Index is an annual political ranking of jurisdictions according to their degree of financial secrecy. The Financial Secrecy Index uses multiple measures to examine countries’ transparency, wherein in our research, both the secrecy score and the FSI value are applied. Specifically, the secrecy score consists of qualitative data of laws, regulations, and exchange of information. At the same time, the FSI value combines the secrecy score with a global scale weight component, which measures a jurisdiction share of the international cross-border financial transactions provided to non-residents (Tax Justice Network, 2020b). A high secrecy score is typically associated with unwillingness to exchange and share information with other national authorities and a lack of transparency in the public and private sector. Along with great facilitation of money-laundering, these characteristics are often associated with tax havens, according to the Tax Justice Network (2020b).

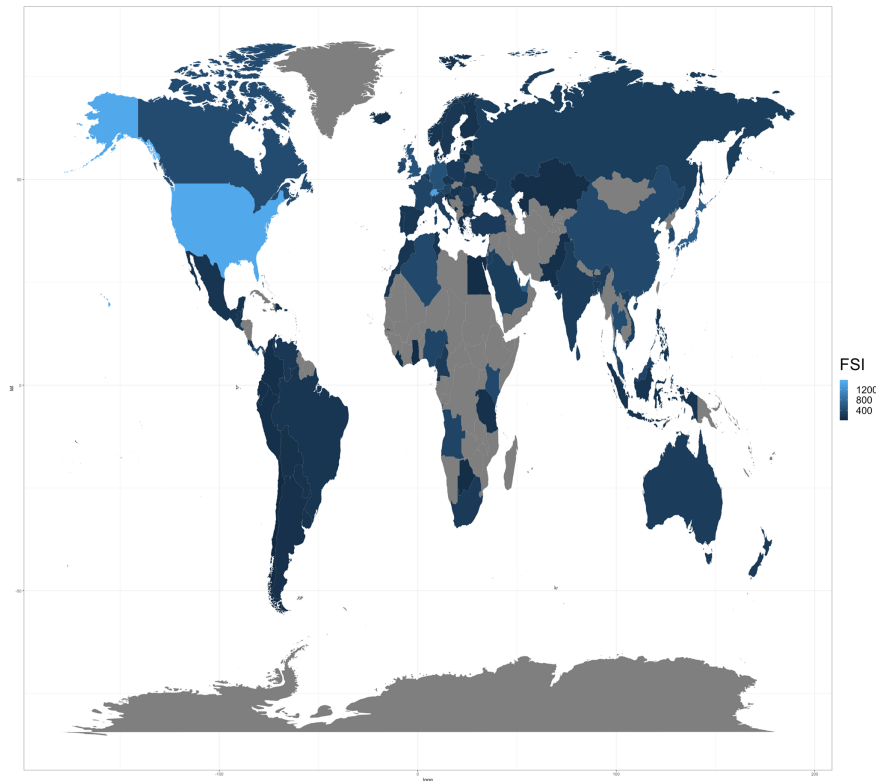
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<sup>8</sup>Go to appendix B, for a complete list of all the countries included as tax havens.

Through utilizing the FSI value, the “big players” can be assessed, which contrasts typical lists of tax havens that tend to focus on smaller jurisdictions. However, their impact on the global economy is somewhat insignificant (Tax Justice Network, 2020c). The larger countries, and not necessarily those associated with being a tax haven, make up most of the global share of cross-border financial transactions. Thus, using the Financial Secrecy Index, which incorporates secrecy and the potential “damage” a nation can contribute to, is most suitable for our research purpose.

Critiques of the Financial Secrecy Index are mostly about the scale weighting component (Tax Justice Network, 2020c). By scaling, The United States jumps from the 73rd position on the secrecy score to become the second-worst offender on the FSI value (Tax Justice Network, 2020a). On the other hand, Cook Island, which has a higher secrecy score than The United States, is ranked as the least harmful country at 133 on the FSI value. Therefore, one could argue that larger countries are mistreated simply due to a larger financial sector. Nonetheless, the FSI value shows that the large countries are the most harmful when less transparent, and thus what our research will focus on.

Figure 1, shows a chart that displays the FSI value and its specific concentration worldwide. Light blue implies a high score, while dark blue implies a low score. Finally, grey indicates a lack of data for a particular country, as the Financial Secrecy Index currently only consists of 133 countries. Looking at the map, it should be clear that large developed economies, including The United States and Switzerland, are some of the world’s largest tax havens. Therefore, the misconceived perception that tax havens are only small islands in the Caribbean Sea or the Pacific should now be clear.



**Figure 1:** Mapping of the Financial Secrecy Index concentration around the world.

## 2.2 Governance

In its simplest form, governance can be defined as “how society or groups within it, organize to make decisions” (Institute on governance, 2020). The term is broad and refers to how countries, firms, and even small informal groups function. It is not only about formal delegation of power but also about culture, norms, and visions. Given its broad definition, it can be challenging to measure and highly dependent on what aspect of governance is being measured.

### 2.2.1 Governance index

In this thesis, Kaufmann and Kray (2019) governance index, which measures institutional quality and traditions within a country, is used. The governance index is our primary variable of interest in this thesis, and it takes values between -2.5 and 2.5, where a high score indicates a well-governed country. The variable is normally distributed with a mean equal to zero and unit variance. The score is averaged across five measures of institutions, as we have excluded one, to replicate DH2009 perfectly. The five indicators included are voice and accountability, political stability and absence of violence, government effectiveness, rule of law, and control of corruption. The index is used repeatedly in studies related to government and institutions. And while many indexes lack data for small tax havens, the governance index provides data for almost all jurisdictions in the world.<sup>9</sup>

## 2.3 Control variables

As control variables, the GDP per capita, population, UN membership, corporate tax rate, and whether a country is landlocked are used. GDP per capita<sup>10</sup> is used to identify that tax havens commonly are more affluent than nonhavens. The population variable is used to control for a tax haven’s tendency towards being less populated. Landlocked is a binary variable, equal to 1 if the country is landlocked. Previous literature has emphasized that tax havens are island economies, with access to the sea as a minimum, which the variable landlocked will capture (DH2009). UN member is a binary variable equal to one for countries that have been members of the United Nations throughout our sample period. Using this control variable enables us to control for sovereignty among the jurisdictions.

Further on, the statutory corporate tax rate is used to extract more of the secrecy components and control for capital flow, mainly due to low tax rates. Finally, regional dummies are included for Europe, Asia/Pacific, Central Asia, the Americas, Africa, and the Middle East. They are included to control for differences across regions. This is important, as tax havens can be clustered in particular areas, such as the Caribbean Sea. Note that “distance by air” which measures the distance between a country’s capital and the nearest city of New York, Rotterdam, and Tokyo, is left out due to the time-consuming nature of gathering said data and the inconsequential role it played in DH2009.

## 2.4 Alternative variables for governance and institutions

In subsection 4.4, other political and institutional factors that may affect the likelihood of a country becoming a tax haven are discussed. The first on being the Corruption Perceptions Index, which investigates corruption in a country’s public sector, including political and administrative corruption (Transparency

<sup>9</sup>The Financial Secrecy Index in 2020 covered 133 jurisdictions, where the governance index had a score for 125 of the jurisdictions.

<sup>10</sup>The GDP per capita is adjusted for purchasing power parity and expressed in US dollars

International 2019a). The index is measured from 0 to 100, where 100 is equal to no corruption. The second variable is the Business Freedom Index, which captures how efficient and effortless a business can be started, operated, and closed based on jurisdictions regulations. The variable is based on a scale from 0 to 100, where 100 is equal to the most efficient and freest country to do business in (The Heritage Foundation, 2019).

## 2.5 Descriptive statistics

Table 1 provides descriptive statistics for both our cross-sectional and panel data. Firstly, one observes that the averages for the panel data applied in the 2010-2019 sample period are higher than for the cross-sectional data used in 2004 and 2019. This is mainly due to a lower sample of countries included in the panel set, due to the Financial Secrecy Index so far not covering all the world's jurisdictions. Many of the countries not implemented yet are typically developing countries with weak governance quality. This is why it can be observed that the governance index is reported with an average of 0.706, which is a significantly higher score compared to the two other columns in Table 1. Further on, panel data will reinforce this effect of not including countries situated in the lowest quartile concerning governance quality, thus increasing the mean. For the secrecy score, one observes a mean of 65, which is relatively high given countries like Spain, Norway, and Estonia having secrecy scores at 44, implying that the overall transparency for the countries included is relatively low. Lastly, the tax rate differs significantly among countries, from 0% at its lowest to over 40%. This shows that it is a diverse group of countries, at least concerning local policies on taxation.

**Table 1:** *Descriptive Statistics*

Statistic	2004		2019		2010 - 2019	
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Financial Secrecy Index	-	-	-	-	288.906	362.486
Secrecy score	-	-	-	-	64.513	13.905
GDP per capita	14,877.780	19,860.280	23,440.440	25,647.290	37,047.730	32,388.240
Population	30,874,575	123,048,181	36,839,090	140,392,732	47,722,258	184,592,309
Governance index	-0.036	1.021	-0.022	1.004	0.706	0.786
Corporate tax rate	-	-	-	-	21.078	9.859
Corruption Perceptions Index	-	-	-	-	57.989	18.625
Business Freedom index	-	-	-	-	73.803	13.355
UN member (=1)	0.928	0.259	0.935	0.2607	-	-
Landlocked (=1)	0.212	0.409	0.212	0.409	-	-

*Note:* The governance index is normalized to have a mean equal to zero and unit variance; however, there are small deviations in the summary statistics due to excluding a few countries missing some data. There are 208 countries included in the cross-sectional data for 2004 and 2019. The panel data is unbalanced with 2 to 5 observations per country for 2010, 2012, 2014, 2017, and 2019. A country in the panel data has on average, 4.07 years of Financial Secrecy Index data reported, with a corresponding standard deviation of 1.21. The Financial Secrecy Index, secrecy score, GDP per capita, population, and governance index score have 427 observations. The corporate tax rate has 426 observations; the Corruption Perceptions Index has 284 observations, while the Business Freedom Index has 309 observations.

In Table 2, one can observe descriptive statistics for the two sub-samples, tax havens, and nonhavens, in

2019. There are 35 countries classified as tax haven countries and 173 nonhavens. One can immediately observe that tax havens are more affluent, with an average GDP per capita of 41 343 US dollars, twice the size of nonhavens. Moreover, tax havens are less populated countries with an average population of 1 635 839, while nonhavens have an average population of 44 026 060. However, it is striking to look at the disparity between the two sub-samples' governance index scores. Tax havens have an average score of 0.725, while nonhavens only have a mean equal to -0.173, implying that tax havens appear to be better-governed jurisdictions.

Furthermore, UN membership and landlocked confirms common perceptions of tax havens. Such as typical tax havens being less likely to be independent sovereignty states and more likely to have a coastline. That is not surprising, as several countries classified as tax havens are a part of the British Overseas Territories, thus not independent countries.

**Table 2:** *Descriptive statistics for tax havens and nonhavens in 2019*

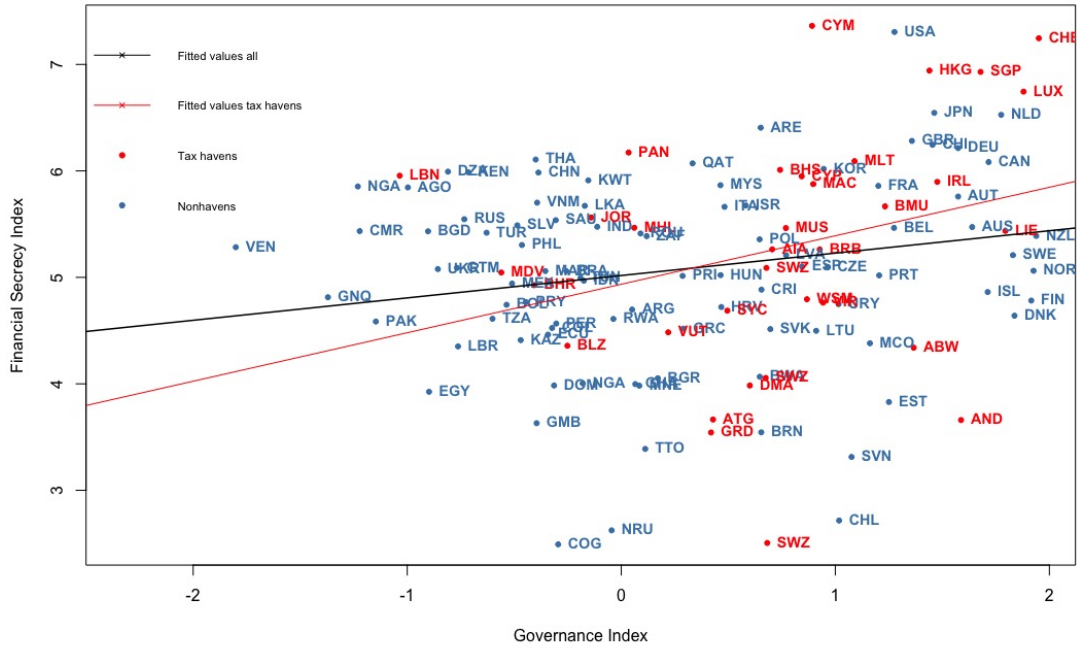
Statistic	Tax havens			Nonhavens		
	N	Mean	St. Dev.	N	Mean	St. Dev.
Financial Secrecy Index	35	362.766	376.574	90	221.838	201.000
Secrecy score	35	69.922	6.994	90	60.789	10.058
GDP per capita (PPP adjusted)	35	41,343.790	36,662.590	173	19,818.380	21,154.470
Population	35	1,635,839	2,807,396	173	44,026,060	153,020,310
Governance index	35	0.725	0.706	173	-0.173	0.989
UN member (=1)	35	0.800	0.406	173	0.954	0.211
Landlocked (=1)	35	0.114	0.323	173	0.231	0.423

*Note:* The summary statistics for tax havens and nonhavens are for 2019. Tax havens are defined after the list in Table 6.

## 2.6 Descriptive evidence

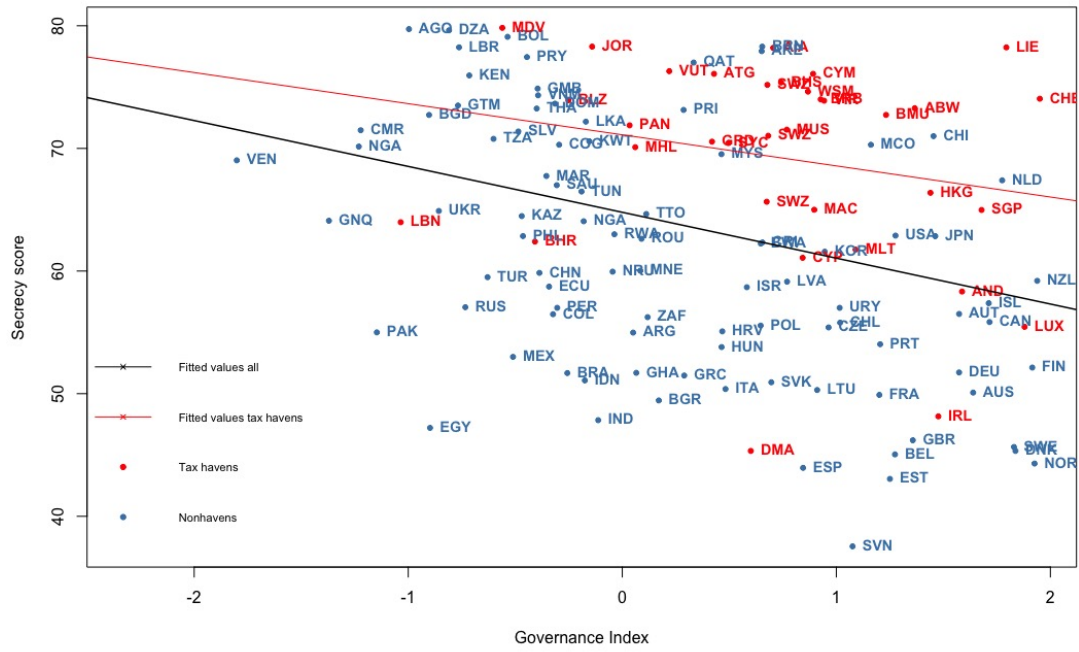
To further investigate the relationship between governance quality and tax haven status, we will now focus on the FSI value and secrecy score.

Figure 2 has plotted the Financial Secrecy Index against the governance index, with red dots reflecting tax havens categorized by DH2009. From Figure 2, we observe what seems to be a positive relationship between the FSI value and the governance index score, reflected by the black fitted upward-sloping line. Typical tax havens do not seem to perform better than comparable nonhavens when the entire data set is assessed. If this would have been the case, then the red dots should have been above the black fitted line. Nonetheless, if only typical tax havens are applied, one observes a much steeper line than the whole sample's fitted line. Which, implies that tax havens are more susceptible to changes in governance quality. However, when adding nonhavens, the relationship is destroyed or at least much weaker.



**Figure 2:** Plot of the Financial Secrecy Index against the governance index

Additionally, Figure 3 has plotted the relationship between the secrecy score and the governance index. The relationship between the secrecy score and the governance index is negative, reflected by the black fitted downward-sloping line. Thus, improved governance quality will reduce the secrecy score, meaning that a well-governed country will more likely comply with international rules and norms. However, it is striking that most of the tax havens defined by DH2009 are observed above the black fitted line. It seems like tax havens have a higher degree of secrecy for any level of governance quality. To make it more clear, one can observe the red fitted line for tax havens only. The red slope is less steep than the black line representing fitted values for the whole sample. The difference between the slopes' steepness is consistent with DH2009 findings that tax havens secrecy score is less sensitive to changes in the governance index. Specifically, that tax havens are continuously more opaque in comparison to nonhavens when governance quality increases. Also, one observes that very few tax havens have a governance index score below zero, while there is no clear pattern for the nonhavens. This most likely stems from the fact that a certain level of respect for property rights has to be in place for any rational individual or company to consider relocating their funds to an offshore location.



**Figure 3:** Plot of the secrecy score against the governance index

### 3 Regression Techniques

In this section, we describe our regression techniques and model choice. Robust and clustered standard errors are used to account for potential problems with heteroscedasticity and autocorrelation. Multicollinearity diagnostics can be found in appendix C.

Estimating regressions for the binary dependent variable, tax haven status leaves us with two natural regression methods, the linear probability model (OLS) and the probit and logistic models based on maximum probability estimation. In many practical cases, the linear probability model and the probit and logit models are indistinguishable. The only difference is that a linear probability model is straightforward to interpret, while probit and logit models are not. Thus, one should use the linear probability model for simplicity. In Equation 1 our OLS specification is shown,

$$TH_i = \beta_0 + \beta_1 Governance_i + \mathbf{X}_i \lambda + \epsilon_i \quad (1)$$

where  $TH_i$  is a dichotomous variable for tax haven status for country  $i$ ,  $Governance_i$  is the governance index score for country  $i$  and  $\mathbf{X}_i$  is a vector consisting of all our defined country specific control variables.

For the replication of DH2009, the same model as in Equation 1 is predicted, although with different parameters. This is seen in Equation 2,

$$TH_i = \phi(\beta_0 + \beta_1 Governance_i + \mathbf{X}_i \lambda + \epsilon_i) \quad (2)$$

where  $\phi(z) = P(Z \leq z)$ ,  $Z \sim N(0,1)$  is the mathematical expression for a normal distribution. The probability is now forced to be in the range of 0 - 1, typically leading to an S-shaped probability curve. This is the advantage of probabilistic regression compared to linear probability models, as we do not risk getting probability results that violate the definition of probability itself.

The question becomes which model is most appropriate for estimating the relationship between tax havens and a country's governance index. DH2009 used both models and got consistent results. According to Long (2007), a rule of thumb is that if the modeled probabilities are extreme, close to 0 or 1, one should use probit or logic regression. If the probabilities are moderate, typically in the range between 0.2 and 0.8, one should favor a linear model for interpretation purposes. In our case, we report both types of regressions for replicating DH2009, while only the linear model for 2019, as there are no extreme probabilities present.

Our analysis on 2019 data, contains one OLS model, and multiple fixed effects models with the Financial Secrecy Index as our dependent variable. Our OLS model specification is shown in Equation 3,

$$\ln(FSI_i) = \beta_0 + \beta_1 Governance_i + \mathbf{X}_i \lambda + \epsilon_i \quad (3)$$

where the only difference from the specification in Equation 1 and 2 is the left-hand side. Specifically,  $TH_i$  is replaced with  $\ln(FSI_i)$ , which is the logarithm of the Financial Secrecy Index for country  $i$ . The FSI value is expressed in the logarithmic form to account for extreme sample values.

Finally, we apply the following entity and time fixed effects specification, shown in Equation 4,



$$\text{Ln}(FSI_{i,t}) = B_1 \text{Governance}_{i,t} + \mathbf{X}_{i,t} \lambda + \delta_i + \theta_t + \epsilon_{i,t} \quad (4)$$

where  $\text{Ln}(FSI_{i,t})$  is the logarithm of the Financial Secrecy Index for country  $i$  at time  $t$ ,  $\delta_i$  is the country-specific effects, and  $\theta_t$  is the yearly specific effects. The entity and time fixed effects specifications are essential as they account for potential unobserved heterogeneity. Note that the same specification is applied for the results in Table 5, but with two other institutional measures replacing the governance index.

## 4 Results

This section describes our empirical findings, focusing on evaluating the relationship between governance and tax havens, with an OLS and fixed effects model. Examples of why the fixed effects approach is more fitting than the OLS model is given in subsection 4.2. Furthermore, subsection 4.4 discusses additional possible institutional measures that may influence the probability of tax haven status. Lastly, several caveats with the indexes applied in our research are addressed.

### 4.1 Main result

In Table 3 and column 1, our replication of DH2009 follows. The results show a positive and significant relationship between the probability of being a tax haven and an increase in the governance index for 2004. Despite excluding the distance by air variable, our results are similar to theirs. Our replication provides a significant governance index coefficient of 0.657 at the 5% level, while they report a coefficient of 0.668, also significant at the 5% level. Thereby, our intention of a nearly perfect replication is achieved.

Additionally, in column 2, one observes a positive and significant governance index coefficient of 0.074 at the 5% level with an OLS model. DH2009 does not report OLS estimates but explicitly states that both OLS and probit estimates are magnitude wise about the same. In column 3, data from 2019 are applied, and one observes that the governance index no longer significantly affects the likelihood of a country being a tax haven. This result is not consistent with DH2009 and somehow surprising. Therefore, a test to see if the governance index coefficient in column 2 and 3 differ from each other is performed. The null hypothesis cannot be rejected, which implies that they are equal. One potential reason for a non-significant governance index coefficient in column 3 could be that tax havens are more affluent now than in 2004. This may result in the GDP per capita, capturing a more considerable degree of the effect, but at the expense of the governance index. It should be noted that the results with a probit model with the same specifications as in column 3 do lead to a significant relationship between governance and tax haven status. Therefore, it is at least a reason to believe that their result is not as robust today as in 2004.

Since we are interested in the isolated effect governance has on the likelihood of a country becoming a tax haven, we study model predictions with two different countries and compare them. Suppose one assumes a country in Europe that is not landlocked, a UN member, average GDP per capita, and a population of one million. From this, one can extract the isolated effect of changes in governance quality on the likelihood of becoming a tax haven. Throughout the thesis, Turkey and Switzerland are used as counterexamples. Turkey has a governance index score below average, and the political uncertainty leads to fluctuating scores.

In contrast, Switzerland has proven to be one of the most well-functioning countries, consistently at the top of political rankings. Suppose one assesses the isolated effect of going from a governance index score of -0.1950 (Turkey) to 1.9592 (Switzerland). In that case, it increases the likelihood of becoming a tax haven with 33.8 % for the probit model in column 1. The corresponding result for the OLS model in column 2 is 15.9%. The results are very different magnitude wise, and therefore highly dependent on if one assumes normally distributed or linear probability. The same predictions for column 3 are provided with 2019 data. The isolated effect of going from a governance index score of -0.6249 (Turkey) to 1.9507 (Switzerland) increases the likelihood of becoming a tax haven by 14.7%. If one had applied the average population of all countries of approximately 30 million people in 2004 and 36 million people in 2019, the probabilities would

have failed for the OLS models. The probit model for 2004 estimates a 0% probability, of the likelihood of Turkey becoming a tax haven, while Switzerland's likelihood of becoming a tax haven would be 4%. This example demonstrates how weak DH2009 results are for changes in the population size. Thus, it is obvious why they have decided to highlight regression results, where the population is below one million.

**Table 3:** Regression results - main findings

	<i>Dependent variable:</i>					
	Tax haven (=1)			Financial Secrecy Index		
	2004 (1)	2004 (2)	2019 (3)	2019 (4)	2010-2019 (5)	2010-2019 (6)
Governance index	0.657** (0.256)	0.074** (0.033)	0.057 (0.039)	0.154 (0.128)	0.015 (0.304)	0.045 (0.307)
Log of GDP per capita	0.119 (0.216)	0.026 (0.031)	0.042 (0.038)	0.430*** (0.138)	0.652* (0.350)	0.623** (0.353)
Log of population	-0.402*** (0.078)	-0.068*** (0.013)	-0.070*** (0.013)	0.197*** (0.037)	0.032 (0.09)	0.035 (0.088)
UN member (=1)	0.444 (0.416)	0.014 (0.119)	0.034 (0.124)	-0.767* (0.442)		
Landlocked (=1)	0.082 (0.367)	0.001 (0.051)	-0.001 (0.051)	0.038 (0.228)		
Corporate tax rate						-0.027** (0.014)
Constant		0.944*** (0.323)	0.817** (0.376)	-1.214 (1.504)		
Model	Probit	OLS	OLS	OLS	Panel FE	Panel FE
Regional dummies	Yes	Yes	Yes	Yes	No	No
Observations	208	208	208	125	426	426
Number of countries	208	208	208	125	105	105
R <sup>2</sup>		0.355	0.343	0.375	0.017	0.026
Adjusted R <sup>2</sup>		0.322	0.309	0.320	-0.329	-0.322
Log Likelihood	-51.216					
Akaike Inf. Crit.	124.433					
Residual Std. Error		0.309	0.312	0.796		
F Statistic		10.842***	10.263***	6.829***	1.825	2.092*

*Note:* The dependent variable Tax haven (=1), is based on the countries listed in Table 6. The Financial Secrecy Index is logged, and full coverage of all variables are listed in appendix A. The regression includes regional dummy variables for Europe, Central Asia, Asia/Pacific, the Americas, the Middle East, and Africa. Robust standard errors in column 1 to 4 and clustered standard errors for column 5 and 6 in parentheses; \*significant at the 10 % level; \*\*significant at the 5 % level; \*\*\*significant at the 1 % level.

In column 4, Table 3, the governance index coefficient has a non-significant effect on the FSI value. On the other hand, the GDP per capita and population are significant at the 1% level. According to the results, an increase in the GDP per capita and population of 10% will increase a given country's FSI value by 4,30 % and 1,97 %, respectively. Again, one can use Turkey and Switzerland to look at the isolated effect governance has on the likelihood of a country becoming a tax haven. If one goes from a governance

index score of -0.6249 (Turkey) to 1.9507 (Switzerland), it increases the FSI value by 95.027 points. This is equal to approximately 8% of the difference between Switzerland and Turkey's respective FSI values. It should be noted that the governance index coefficient is not significant, meaning that one can not reject the hypothesis that the coefficient is equal to zero.

In the last two columns, panel data and fixed effects are applied. The results show that the governance index is not significant, nor is the population coefficient. The GDP per capita coefficient is significant at the 10% level for column 5 and at the 5% level for column 6. The coefficient is positive, meaning that wealthy countries are more likely to have a high FSI value. Adding the corporate tax rate to column 6 provides a significant coefficient at the 5% level, and the relationship is negative. Not surprisingly, a high corporate tax rate decreases the FSI value, as tax havens are in general considered as low tax environments. One would expect the reported coefficient of -0.027 to be magnitude wise more important if the effective corporate tax rate would have been applied. For instance, Ireland operates with a corporate tax rate of 12.5 %. Still, findings from Comptroller and auditor general in Ireland (2016) suggest that 13 of the top multinational firms in the country had effective corporate tax rates below 1 %. Therefore, the coefficient's magnitude would be much more significant if the lowest possible corporate income tax rate after all loopholes and handshake agreements were accounted for.

The isolated effect of going from a governance index score of Turkey to Switzerland is equal to a 1.12% increase in the FSI value. However, the null hypothesis cannot be rejected, meaning that one cannot confirm that the coefficient is different from zero. The results are very different magnitude wise when applying fixed effects, as one would expect when controlling for differences among countries and time.

## 4.2 Criticism of Dharmapala and Hines (2009)

DH2009 provides both extensive and convincing evidence that their results are causal and have high explanatory power. However, there are several issues with their analysis we would like to emphasize. Firstly, using cross-sectional data restricts the analysis to one given point in time, in this case, the year 2004. Also, DH2009 claims that tax haven status is highly stable and has no meaningful longitudinal variation in the measure; hence a cross-sectional approach is appropriate. We agree that tax haven status is relatively stable considering other lists, among them Palan et al. (2010) and OECD (2000). Nevertheless, Hines and Rice (1994) emphasize the vague characterization of tax havens and that the classification to some extent is arbitrary, which again makes the classification liable to selection bias. As a result, others who have made separate lists, such as Palan et al. (2010), may have continued using these "arbitrary" classifications and potential circularity problems may have occurred.

Secondly, even-though DH2009 claims that tax haven status is time-invariant, their independent variable of interest, governance index, cannot be said to be the same. The governance index changes each year; however, in most cases, not by much. Nonetheless, the relative differences between tax havens and nonhavens can become significant over time. Given that governance changes, it follows logically that tax haven status also changes, and therefore, the lists of tax havens should also change with time.

Lastly, the causal inference in a cross-sectional analysis like theirs is, to some extent, limited. Presumably ensuring no endogeneity problems or limiting them in a setting like this is very difficult (Esping-Andersen and Przeworski, 2001). There is also a significant risk of having confounding variables that affect the estimated relationship (Wooldridge, 2012). For instance, the governance index might affect the likelihood

of a country becoming a tax haven; on the other hand, being classified as a tax haven may also affect the governance index. Further on, variables in the error term, such as education or life expectancy, might influence both governance quality and our dependent variable. If this is the case, then the governance index coefficient will be biased (Collischon and Eberl, 2020). In general, it is challenging to ensure good inferences, especially with only observations from one time period (Esping-Andersen and Przeworski, 2001).

Based on the above, we argue that DH2009 results cannot be interpreted causally. The results from 2004 presumably suffer from both omitted variable bias and perhaps have confounding variables too. The tax haven classification they use is dichotomous and classified as somewhat arbitrary by Hines and Rice (1994). Therefore, potentially suffering from selection bias since a country is not necessarily exclusively a tax haven or nonhaven. After all, there is currently no worldwide accepted definition of tax havens (Cobham et al., 2015). Thus, tax haven status should be assessed with a continuous variable, where neither classification needs to be mutually exclusive. The Financial Secrecy Index offers such a continuous variable, where we believe the FSI value is the most suitable indicator for our research purpose.

### 4.3 Robustness checks

Our main regression results portray a different picture than previous literature reports concerning governance quality and tax haven status. Regarding the control variables, one observed that the GDP per capita had a non-significant effect on the binary dependent variable in columns 1 to 3, consistent with DH2009. However, with the FSI value as the dependent variable, the GDP per capita increased in size and became significant.<sup>11</sup> This is consistent with common economic literature, where better governance makes a country more wealthy. For the population coefficient and the FSI value as the dependent variable, the coefficient no longer negatively affects a tax haven. On the contrary, it becomes positive and significant at the 1 % level. This finding is inconsistent with the perceived perception that tax havens typically are less populated.

To further validate our findings, we created Table 4, where various regression models have been performed to test our results robustness. Since mostly panel data and fixed effects have been used in our research, we have only presented this in our robustness checks.

<sup>11</sup>The relationship between the FSI value and the GDP per capita is presented in Figure 6.

**Table 4:** *Robustness checks*

	<i>Dependent variable:</i>					
	<b>Financial Secrecy Index</b>				<b>Secrecy score</b>	
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
Governance Index	0.095 (0.276)	0.054 (0.191)	0.298 (0.509)	0.012 (0.732)	-0.290 (2.588)	-1.360 (2.525)
Log of GDP per capita		0.053 (0.325)	0.975* (0.543)	0.554 (1.539)		12.487** (4.857)
Log of population		0.057 (0.037)	0.029 (0.161)	-0.116 (0.143)		0.260 (0.533)
Corporate tax rate		-0.019*** (0.007)	0.053 (0.050)			-0.591*** (0.219)
Sample	All	FSI > average	Tax havens	CTR ≤ 10 %	All	All
Observations	427	135	164	69	427	426
Number of countries	105	41	33	19	105	105
R <sup>2</sup>	0.001	0.043	0.045	0.008	0.00005	0.074
Adjusted R <sup>2</sup>	-0.343	-0.490	-0.265	-0.569	-0.344	-0.258

*Note:* That the Financial Secrecy Index is logged while the secrecy score is in its original format. Sample All is the full panel data set. FSI > average includes only those countries with secrecy score above the average. Tax havens include only those countries listed in subsection B as tax havens. CTR ≤ 10 % only includes countries with a corporate tax rate equal to and below 10%. Clustered standard errors are in parentheses; \*significant at the 10 % level; \*\*significant at the 5 % level; \*\*\*significant at the 1 % level.

In column 1 in Table 4 we wanted to see how the governance index's magnitude changed when only applied in a single regression. Compared with the governance index coefficient in Table 3, column 4, we see that the coefficient is approximately five times as large. This could perhaps be explained by the positive and significant GDP per capita, absorbing much of the effect. Nonetheless, the governance coefficient still does not become significant. This certainly emphasizes that the relationship is far from strong enough, even when applied in a single regression. Further on, we wanted to see if we could obtain any significant coefficients for the governance index's five indicators. Only five indicators are applied since regulatory quality is disregarded due to potential multicollinearity issues (DH2009). The results in Table 9 show that all five governance index measures are non-significant. Only the rule of law has a significantly different magnitude wise effect than the governance index coefficient as a whole. Thus, our results support Rose and Spigel (2007), showing that rule of law and political stability does not significantly impact tax haven status.

In column 5 in Table 4, a single regression is applied, with only the secrecy score as the dependent variable. Our intention with using the secrecy score was to isolate the effect of governance quality on a measure intended to reflect the degree of transparency within a jurisdiction. An increased secrecy score represents a

more opaque country and an increased likelihood of tax haven status. However, our results are inconsistent with the popular view that governance quality makes a country more secret. We observe a negative relationship, implying that countries will become more transparent as governance quality increases.<sup>12</sup> One potential reason for this inconsistency with previous literature is that the secrecy score likely reflects a significant part of a country’s institutional quality. Therefore, a high secrecy score does not necessarily imply that a country is more opaque than other similar nations but perhaps also identifies differences in institutional quality between countries. This can be observed by looking at the top 25 countries on the secrecy score in Table 13. Here, one observes that there is a combination of typical tax havens and less developed countries. This can potentially be interpreted as an indication that tax havens have deliberately implemented policies to increase secrecy, thus more opaque<sup>13</sup>. On the other hand, countries such as Angola and Algeria have low institutional quality and, therefore, their secrecy score is of little value concerning tax haven status.

In columns 2 and 3 in Table 4, only typical tax havens and countries with an FSI value above the average are utilized. The idea behind column 2 is to try to capture the largest players that have potentially detrimental effects when less transparent. Also, looking at typical tax havens in Table 6, and countries ranked by their FSI value in Table 12, only 10 of the typical tax havens are in the top 25 of the FSI rankings. This enables us to see how the governance index’s magnitude differs when only applying a fraction of the typical tax havens to the full sample in column 3. In Figure 2, one could observe that the relationship between governance and the FSI value is significantly steeper for tax havens compared to nonhavens. However, we wanted to see the exact magnitude wise difference between the two samples. The results show that the typical tax havens’ governance coefficient is approximately six times larger than for countries above average on the FSI value. This underlines that Hines and Rice (1994), who initially choose the tax havens applied in our models, are significantly more susceptible to the effects of governance and accordingly obtain higher FSI values. This perhaps also highlights a focal point regarding the interpretation of the impact of governance on tax havens. Shaxson and Christensen (2013) argue that if one assumes no poorly governed tax havens, there will be no identifiable causation chain in the prescribed relationship. This is because countries that are already well-governed are more likely to attract financial capital. Thus the effect of governance quality is potentially over-estimated.

Additionally, two regression models were run, which excluded countries in the lowest quartile on governance quality, and one where only countries above-average governance were included. The concept was to observe the counterintuitive connection between governance and foreign welfare, where improved governance contributes to a country becoming more harmful from a global perspective. For instance, one could assume that an increase in governance only increases the likelihood of becoming a tax haven up until a certain threshold. After that, it potentially flattens, until a certain level, where the governance becomes too “high”, and the morality of a country’s rule-makers will have to surface. Thus, ending tax haven operations. This argument is based on the belief that a well-governed country has diverse and ethical rule-makers, where exploiting developing countries<sup>14</sup> will not be tolerated. However, our results indicate no threshold where governance quality becomes too high, prompting countries not to turn a blind eye to the harmful externalities their actions impose on nonhavens.

In column 4 in Table 4, countries with a statutory corporate tax rate equivalent to or below 10% are used.

<sup>12</sup>The relationship between governance quality and the secrecy score can be seen in Figure 3.

<sup>13</sup>Tax haven countries in DH2009 are more secret for any level of governance, see Figure 3.

<sup>14</sup>The negative externalities from tax havens are, according to Schjeldrup (2015) most detrimental to developing countries.

The intention was to exploit one of the specific characteristics of tax havens, namely low or zero taxation. One could also expect a country with a low corporate tax rate to have a more considerable inflow of capital, both legal and illegal. Therefore, they are potentially more susceptible to governance quality changes than comparable high tax countries. However, the positive association between governance quality and the FSI value is lower than in columns 2 and 3. This implies that restricting the sample to low-tax countries alone does not change our current findings.

In column 6 in Table 4, the same variables as in column 6, Table 3 are applied, only now with the secrecy score. Previously, we have argued that the secrecy score seems to capture more of a country's institutional part. At the same time, the FSI value is perhaps too broad, treating large countries like The United States unfairly. Further on, since we have in Table 3 and in Figure 6, shown that increased wealth leads to higher FSI values and governance, respectively. We wanted to see how the GDP per capita differed with the secrecy score being the dependent variable.

Our results show that the governance coefficients magnitude drastically changes from column 5 to column 6, approximately five times larger in absolute value. This highlights the negative correlation between the independent variables in our data. One can also observe that the coefficient has become negative, compared to the main regression results. The result in column 6 is, in our opinion, evidence of the FSI value being the preferred continuous measure of tax havens. This is because a negative relationship between tax havens and governance seems highly unlikely and contradicts all common literature on tax havens.

Considering the GDP per capita, one observes that the coefficient is highly significant and magnitude wise influential. Mara (2015) finds no evidence for governance quality, but a significant and robust effect of the GDP per capita on tax haven likelihood. Our results support her finding with both the FSI value and the secrecy score, which can be seen in appendix E. However, our findings are not robust to several different variants, seen in column 2 and 4, in Table 4. Lastly, we want to reiterate that most interpretations of coefficients in this subsection are performed on variables that are not significant at any of the standard significance levels.

#### 4.4 Additional results

In Figure 2, one observed a positive relationship between the governance index and the FSI value. However, a significant positive relationship with fixed effects or OLS estimation in Table 3 has not been obtained. Consequently, we reject the hypothesis and consider other political, institutional, and economic factors related to tax havens.



**Table 5:** *Alternative measures of institutional quality related to tax havens*

	<i>Dependent variable:</i>					
	<b>Financial Secrecy Index</b>			<b>Secrecy score</b>		
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
Corruption Perceptions Index	0.021** (0.009)	0.021** (0.008)	0.027*** (0.009)	0.031 (0.135)	0.003 (0.123)	0.054 (0.127)
Business Freedom Index			-0.017** (0.007)			-0.131* (0.078)
Log of GDP per capita		0.734* (0.388)	0.800** (0.368)		16.276*** (4.802)	16.809*** (4.858)
Log of population		0.109*** (0.031)	0.105*** (0.030)		0.312 (0.755)	0.281 (0.768)
Corporate tax rate		-0.038** (0.015)	-0.030** (0.014)		-0.597** (0.258)	-0.537** (0.247)
Observations	284	284	282	284	284	282
Number of countries	76	76	75	76	76	75
R <sup>2</sup>	0.040	0.095	0.133	0.0005	0.104	0.117
Adjusted R <sup>2</sup>	-0.338	-0.281	-0.230	-0.393	-0.268	-0.253
F Statistic	8.515***	5.227***	6.096***	0.098	5.783***	5.267***

*Note:* The Financial Secrecy Index is logged while the secrecy score is in its original format. Clustered standard errors are in parentheses; \*significant at the 10 % level; \*\*significant at the 5 % level; \*\*\*significant at the 1 % level.

In column 1 in Table 5, the Corruption Perceptions Index (CPI) is significant at the 5% level with a coefficient of 0.021, leading to a one-unit increase in the CPI score, increasing the FSI value by 1.021%. Looking at column 2, one can see that the relationship is robust when controlling for GDP per capita, population, and corporate tax rate, as the CPI coefficient remains the same. The GDP per capita and corporate tax rate are consistent with Table 3, column 5, while population differs. The population coefficient is now positive and significant at the 1% level.

In column 3, the Business Freedom Index (BFI) is added to the regression. The CPI is now significant at the 1% level, and the coefficient is equal to 0.027. If one goes from a CPI of 40 (Turkey) to a CPI of 85 (Switzerland), the FSI value is increased by 3.37 %. The coefficient for the BFI is equal to -0,017 and significant at the 5% level. This means that a one-unit increase in the BFI leads to a 1.017% decrease in the FSI value. The GDP per capita, population, and corporate tax rate still provide consistent results. In fact, the coefficients are more significant than for the results in Table 3.

In column 4, 5 and 6 in Table 5, the secrecy score is the dependent variable. One observes that the CPI is not significant for any of the reported regressions, while the BFI is significant and negative at the 10%

level. A noteworthy result is the highly significant and magnitude wise important coefficient for the GDP per capita in column 5 and 6. The result implies that the more wealthy a country becomes, the more secret it becomes. This is consistent with perceptions of tax havens.

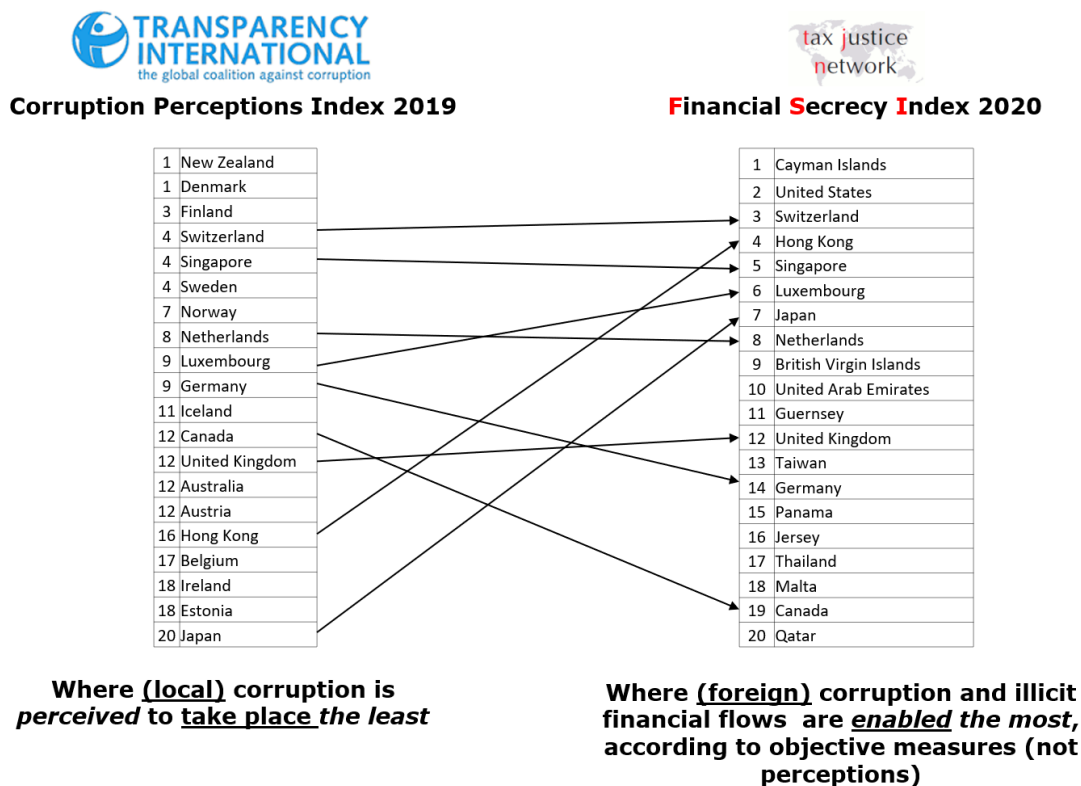
It should be noted that the effect of the GDP per capita is potentially overestimated. The reason is that the Financial Secrecy Index currently only covers 133 countries. Many developing countries that typically have high secrecy scores due to low institutional quality are not included. Therefore, potentially overestimating the effect of GDP per capita on the FSI value and the secrecy score.

#### 4.5 Corruption Perceptions Index and the Business Freedom Index

In this subsection, our findings related to the Corruption Perceptions Index (CPI) and the Business Freedom index (BFI) in Table 5 are discussed. Also important shortcomings with the results, and an intriguing finding considering institutions and the CPI are described.

In Table 5 one observes that the CPI is positive and significant, implying that local perceived corruption affects tax haven likelihood. It is well documented in the literature that Foreign Direct Investment (FDI) inflows decrease when corruption increases, and therefore the result seems reasonable. From Table 5, one can observe how the CPI goes from significant to non-significant with the dependent variable being the secrecy score. We have already argued that this could be related to variations in institutional quality captured by the secrecy score. Accordingly, we only observe a significant and positive relationship between the FSI value and the CPI.

Furthermore, we would like to specify that the CPI has been heavily criticized for its inability to track corruption (Cobbham, 2013). Amongst others, due to the index being based on perceptions from experts, typically professors, managers of big firms, and people in government (Transparency International, 2019a). Since perceptions are not necessarily objective and representative facts, but rather opinions, these typically vary within different groups of society. Therefore, only collecting answers from one group leads to a potential selection bias. Furthermore, the CPI only tracks corruption in the “home country” but fails to capture corruption enabled abroad (Tax Justice Network, 2020d). As a result the index does not capture the effects of a country’s non-compliance with international rules. There are many critics of the CPI, amongst others Cobham (2013), which recommends Transparency International to drop the index. Henry (2012) questions why Switzerland, Singapore, and Luxembourg are ranked among the countries with the lowest degree of corruption, knowing the secrecy they provide.



**Figure 4:** List comparison of the Corruption Perceptions Index and the Financial Secrecy Index (Tax Justice Network, 2020d)

From Figure 4, one observes that Switzerland is at the top of both the CPI and the Financial Secrecy Index. From the CPI results, one can conclude that Switzerland's perceived level of corruption is amongst the lowest in the world. On the other hand, from the Financial Secrecy Index, we observe that Switzerland is among the worst offenders in supplying foreign corruption (Tax Justice Network, 2020d). Conceptually, Henry (2012), Table 3 and Figure 4, capture the obfuscation of institutions. Put differently, the Financial Secrecy Index and the CPI would have completely different narratives in describing Switzerland. Perhaps, the Financial Secrecy Index would emphasize how Switzerland is a major contributor to increasing corruption overseas. Simply consider the amount of money flowing from Nigeria to Switzerland versus the amount flowing from Switzerland to banks located in Nigeria (Tax Justice Network, 2020b). Illicit capital flows in general move, from less developed countries to more wealthy and developed countries. This again leads to increased inequalities in already impoverished countries such as Nigeria (Čihák and Sahay, 2020). On the other hand, the CPI would portray an entirely different picture of Switzerland since it only focuses on local corruption. It should be noted that the CPI is aware of the issues in comparing the two indexes and emphasize that they continuously put pressure on leading countries to close loopholes (Transparency International, 2019b).

For the BFI, one can observe a negative impact from an increase in the BFI on the FSI value and secrecy score. Strictly speaking, a high degree of government efficiency in business regulations reduces both the FSI value and the secrecy score. However, we deem this relationship as bogus, considering our research's purpose. Our purpose and intention behind incorporating the index was to try to estimate how easy it would

be to both incorporate and operate an offshore-company. That is of interest since it is commonly perceived that tax havens have extraordinarily lenient requirements when it comes to establishing offshore-companies (Tax Free Today, 2017). For example, Sharman (2010) showed that the United States and the United Kingdom have systems that allow anyone with an internet connection and minimal capital to establish an anonymous company. One can also mention that Sharman et al. (2015) found that more typical tax havens have a higher degree of corporate transparency than both the United States and the United Kingdom. This is surprising and further evidence that supports our initial idea in using the Financial Secrecy Index as a measure of tax havens.

As a consequence of the aforementioned, the association between the BFI, FSI value, and secrecy score found in Table 5 is overlooked. There is, however, one example that could be mentioned, which we believe supports our decision. Specifically, Switzerland and Panama are ranked as number 3 and 15 on the Financial Secrecy Index, whereas, on the BFI, they are ranked at 50th and 60th place. The deviation between the two indexes, we deem to be incorrect in terms of our analysis, or at least not what we intended to assess. Rather, we agree with Sharman (2010) and Sharman et al. (2015). In particular, their analysis reveals that traditional tax havens, but even major nations, such as the United States and the United Kingdom, have legislation that makes it surprisingly easy to establish and operate an anonymous offshore company.

## 5 Discussion

In this section, we will suggest an alternative hypothesis into what makes a tax haven. Among others, our alternative hypothesis is based on the finance curse from Shaxson and Christensen (2013). Furthermore, Schjeldrup (2015) is used to highlight certain externalities that tax havens inflict upon nohavens.

### 5.1 Finance curse

According to Shaxson and Christensen (2013), “excessive financial sector growth tends to reduce long-term economic growth”. In other words, countries become captured by the financial industry, thereof the name finance curse. The IMF and the Bank for International settlements support the view that financial sector growth is not always positive. Shaxson (2019) contributes to this literature and exemplifies the relationship in Figure 5, where the GDP growth rate and the financial development index is applied. One can, from Figure 5, observe that countries such as Morocco and Poland are close to reaching the threshold in which GDP growth turns. We also observe that the Gambia and the United States are at about the same GDP growth. However, while the Gambia will benefit from an increased financial sector, the United States will benefit from a reduction.

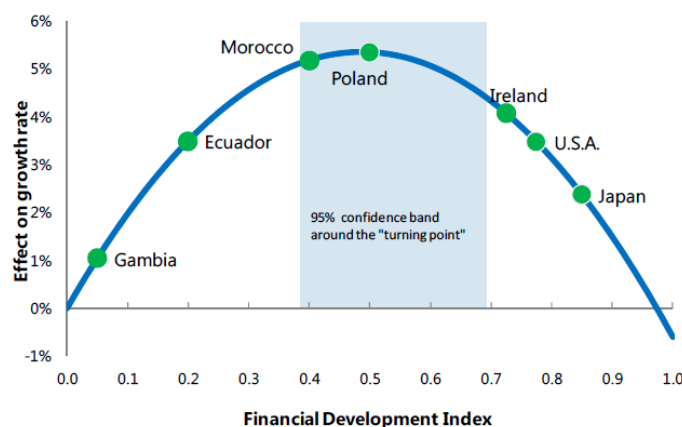


Figure 5: Relationship between the Financial Development Index and the GDP growth rate (Shaxson, 2019)

This implies that there is only a short-term benefit to becoming a tax haven. This short-term benefit comes mostly from increased registration fees and licensing fees related to incorporating an offshore company. Čihák and Sahay (2020) argue that financial sector growth at a certain threshold no longer impacts positively, but instead leads to increased inequality within a nation’s people. This is what we see happening in the United States, where income inequality has increased since the 1980s (Pew Research Center, 2020).

According to Shaxson and Christensen (2013), one of the reasons for reduced economic growth is economic and political capture. Economic capture describes how a financial sector of a certain size dismantles other sectors in an area, such as agriculture and manufacturing, hence ruining the playing field for other sectors and households. Secondly, high salaries in the financial industry attract talents which could have been used more productively, at least from a societal point of view. Lastly, “Financialization,” where industries that produce goods or add real value to the society are neglected due to an overly excessive financial sector taking up all the attention. On the other hand, political capture describes how the elite of finance professionals

uses sophisticated methods such as lobbying, to obtain more favorable terms. The lobbying power in the financial industry is highly significant. Finance, insurance, and real estate companies alone spent 7,4 billion dollars on lobbying between 1998 to 2016 (Igan and Lambert, 2019). The considerable amount may explain the rationale behind the statement made by former UK treasury employee Philip Oppenheim. “In developed established democracies, powerful and well-funded interest groups such as financial services have captured government policy to their own ends, ensuring a benign fiscal environment for their industry”.<sup>15</sup>

## 5.2 Criminalization of finance and corruption

The financial sector is vital to the economic system of today. Through its ability to allocate funds to where they are most needed, the financial sector ensures an efficient global economy. The common perception that banks mainly finance households and firms is no longer accurate. Research by Lund et al. 2013, revealed that the financial sector has dramatically changed in recent years. In between 1995 and 2007, financing of households and companies only accounted for 25 % of the global share of financial services. The new type of finance is the financial engineering part, where synthetic products are created, profits are shifted, and where speculative proprietary trading has taken over. At the same time, the financial sector has been involved in numerous scandals involving insurance-fraud, tax evasion, and mortgage fraud. All were conducted by well-known banks such as HSBC, Credit Suisse, Barclays, and ABN Amro. According to a report submitted to the UK Commission of Banking by the financial detective, Rowan Bosworth-Davies a range of disturbing details concerning the British banking industry. “The British banking sector has become an organized criminal enterprise which has been allowed to develop because of the criminogenic environment in which it functions, which has resulted from the absence of any meaningful regulation, which those who control and manage the banks would fear.”<sup>16</sup>

Additionally, Shaxson and Christensen (2013) argue that the issue appears to be more severe for smaller financial centers or tax havens, which have governments that may be described as authoritarian. Typically, authoritarian states have a strong central authority, where personal freedom and freedom of speech are less prioritized than in typically democratic institutions. Evidence from previous health minister Stuart Syvret, in Jersey, a British Crown Dependency, exemplifies the issue. “Jersey is governed by a crypto-feudal oligarchy which, of itself, is captured by the international offshore banking industry. It is a gangster regime, cloaked with the respectability of the trappings of the British establishment.”<sup>17</sup> Syvret clearly thinks that the financial sector’s size has surpassed the point where it is beneficial for growth, and his description does not portray a well-governed jurisdiction, rather the complete opposite.

## 5.3 Asymmetric information and institutional quality

Schjeledrup (2015) emphasizes that through low transparency, tax havens create asymmetric information that inflicts negative externalities upon nonhavens. For instance, the users of hidden bank accounts in Switzerland only reap the benefits, such as increased income opportunities and more favorable terms for initiating or continuing criminal activities. On the other hand, nonhavens only bear the costs for this type of behavior. In general, less transparency leads to more complicated processes of figuring out who the real beneficial owner of certain assets is since the owners of these bank account’s identities are hidden. Therefore, there is no guarantee that the real owners can be held accountable for potential criminal activities. This

<sup>15</sup>Chapter quote from an article made by Philip Oppenheim, published in in the Financial Times (Oppenheim, 2012).

<sup>16</sup>Chapter quote from Rowan Bosworth-Davies (2013).

<sup>17</sup>Chapter quote from Shaxson and Christensen (2013).

can be exemplified with the Scandinavian Star accident on April 7, 1990, where 158 people died. The investigation showed that the ship had several deficiencies and that the proper security protocol was not conducted. The ship's ownership was never found since it was registered in the Bahamas.<sup>18</sup> This illustrates one critical negative externality of tax havens, specifically, that the actual owners are not necessarily held accountable for their actions. This potentially leads companies to place profitability above quality or safety control since their identity is hidden.

One of the most detrimental effects of tax havens is the degradation of institutional quality in developing countries, which is yet to be addressed. According to Schjelderup (2015), tax havens most harmful feature is how they reduce institutional quality and growth in developing countries. Tax havens make corruption more accessible, thus enabling secrecy and anonymity for foreign capital holders. However, while where virtually all OECD residents could directly profit from tax havens, it is mostly the ruling class in the developing countries who can take advantage of tax havens. Therefore, in a developing country, tax havens might cripple an entire institution or contribute to weakening the institution. This follows as tax havens cater to the ruling elite's self-interest, thereby serving as an opportunity for personal benefit (Schjelderup, 2015). In other words, rent-seeking and corruption are believed to increase as a result of tax haven operations. There are several examples where the ruling-elite in Nigeria and Congo used state finances to benefit themselves by transferring funds to tax havens. Consequently, already disadvantaged countries face the most adverse effects of tax havens.

#### 5.4 The paradox

In the preceding subsections, a fundamental understanding of the potential implications a disproportionate financial sector may have on the society under which it exists has been shown. We have also identified the detrimental effect of tax havens on nonhavens and especially on developing countries. As a result, one may question why a country wants to become a tax haven at all or, indeed, how is it possible that improved governance quality should make a country more inclined to harm other countries?

If we consider a country that experiences improved governance quality and thus chooses to become a tax haven, two clear implications would have to follow. Firstly, increasing governance quality should increase a government's capacity to successfully enact sound policies that favor both people and the institution. On the other hand, becoming a tax haven increases financial activity and the resulting influx of hidden capital into the country. The aforementioned has to logically follow from both improved governance quality and becoming a tax haven. Nonetheless, we have also documented that becoming a tax haven may contribute to regimes becoming captured politically and economically, leading the respective institutions to share parallels with authoritarianism (Shaxson and Christensen, 2013).

Furthermore, in a thriving tax haven, the financial sector's share of the overall GDP will grow exponentially, and over time become extremely important, considering government revenue. Therefore, ensuring that a country always stays within the framework of what defines a well-governed country is presumably very difficult and potentially impossible. Thus, there seem to be two conflicting viewpoints here, where being both concurrently is unlikely, but if the case quite the paradox.

Undoubtedly the definition of sound policies, or staying within the framework of a well-governed country, mentioned above, is very subjective. For instance, in Norway, we have seen that certain political parties

<sup>18</sup>Information collected from Schjelderup (2015).

and organizations have emphasized that tax havens are not necessarily bad. An example from 2009 is where the Norwegian Enterprise Confederation leader specifically noted that tax havens play an essential role in legal business practices and should not be stigmatized just because of their unfavorable externalities.<sup>19</sup> This reasoning is backed by Dharmapala (2008), which stresses that nonhavens are not necessarily worse off as tax havens increase efficiency under certain circumstances and also reduce tax rivalry. Therefore, some might argue that the positive attributes of tax havens outweigh the negatives.

Nonetheless, most countries try to avoid being classified as a tax haven due to the general understanding that the overall impact is unfavorable. From a global perspective, it would be beneficial to reduce the influence tax havens currently have on the global economy. Therefore, implying that an increase in governance would make a country more likely to become a tax haven and thus reduce global wealth can most certainly be characterized as a paradox.

### 5.5 Alternative hypothesis into what makes a tax haven

In Table 5, one could observe that an increase in the governance index had no statistically significant effect on the likelihood of a country becoming a tax haven. Nonetheless, it seems essential to possess a certain level of governance, highlighted by the fact that capital most always goes from poor to rich countries. We have also shown a positive relationship between governance and the FSI value in Figure 2, where typical tax havens are more susceptible to increases in governance. Furthermore, in Figure 3, we observed that tax havens used in DH2009, on average, had higher secrecy scores than comparable nonhavens for a given governance index score. Overall, we propose an alternative hypothesis based on the finance curse and a perception that common indexes, such as the governance index and the CPI, might be artificially high. In our opinion, the problems seem to be more eminent for typical tax havens.

Our alternative hypothesis suggests that indexes such as the governance index and the CPI are inflated. This implies that the relationship that DH2009 shows is biased. We argue that it is counterintuitive to believe that countries that have such an extensive financial sector, such as tax havens, are not impacted by either political or economic capture in any way. We believe that tax havens typically become victims of an aggressive financial sector with mobile capital, which can instantly be relocated to other jurisdictions. This gives the owners of mobile capital an edge on tax haven governments. Consider this; currently, both tax haven governments and the users of tax havens are part of a mutually beneficial relationship. Presumably, both parties suffer significant losses or increased tax liabilities if tax havens are abolished. However, in many cases, mobile capital owners are less sensitive to exactly which tax haven is responsible for safely managing their capital. Furthermore, tax havens can only reap benefits from mobile capital, which they as nonhavens or if not chosen as a preferred tax haven, cannot benefit from at all. This leads to an uneven balance of power, where tax haven governments have less leverage than large multinational corporations considering potential offshore locations. Large multinational corporations are clearly aware of this and exploit this to their full advantage. We believe that this leads to certain handshake agreements, which are not compatible with being characterized as a well-governed country.

Further on, the governance index by Kaufmann and Kraay (2019) most likely captures most of how local citizens are treated which, concerning tax haven status, perhaps could be considered less important. For tax haven status, it is how non-residents are treated and the quality of the ring-fenced legislation which matters.

<sup>19</sup>Based on details from an interview in Aftenposten 16.12.2009.



This is presumably essential to mobile capital holders. Therefore, considering that the governance index most likely represents local conditions and considering the examples we have shown regarding Jersey and the banking sectors influence on the society, an inflated governance index's hypothesis is strengthened.<sup>20</sup>

Lastly, one can consider a revealed preference argument, implying that tax havens acknowledge that their ring-fenced legislation is harmful. Otherwise, tax havens would encompass both domestic firms and residents within the favorable regime. This follows as only non-residents can exploit the loopholes tax havens provide, while residents' immobile funds are taxed under local legislation. All tax havens are aware of this and know that all negative externalities are shifted onto nonhavens, while tax havens only reap positive externalities. Intentionally running such an operation, knowing the consequences, we argue not to be compatible with such high governance index scores many tax havens have.

Based on the aforementioned, we suspect that the governance index and other indexes, such as the CPI, potentially are inflated. This implies that the picturesque image these common indexes portray perhaps is not an accurate description of the reality in today's tax havens.

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<sup>20</sup>Jersey is ranked as having the 17th highest governance index score in 2019, in our data set.

## 6 Conclusion

This thesis has highlighted the misconceived perception that tax havens are well-governed countries by demonstrating no significant positive relationship between tax havens and governance quality. We believe that the dichotomous approach used by DH2009 where a jurisdiction is either a tax haven or not is subject to co-founding variables and selection bias in deciding on a tax haven list. The independent variable of interest, the governance index, is time-variant, and therefore re-examining the relationship over time is essential. Using the Financial Secrecy Index and a fixed effects regression, we find no significant positive relationship between tax haven status and governance quality. Thus, we have disproved some of DH2009 findings, regarded by many as the most influential evidence on governance quality and tax havens. However, we find a positive significant relationship between corruption and the Financial Secrecy Index. This we interpret as evidence that tax havens cannot, at least on paper, have extensive corruption as it is not possible to attract foreign mobile capital.

Furthermore, we find it counter-intuitive to believe in a positive relationship between an increase in governance quality and the likelihood of a country becoming a tax haven. The general thinking is that an improvement in governance quality should favor both citizens and the institution, however becoming a tax haven does not seem to benefit residents at all, perhaps the opposite. Much of the reason for this is potentially due to tax havens becoming economic and politically captured, which may cause relevant institutions to share similarities with authoritarianism. Our empirical results show no significant positive correlation between governance quality and tax havens, implying that they are consistent with the country capture phenomenon introduced by Shaxson and Christensen (2013).

As a result of our analysis, it is highly questionable if tax havens should be considered well-governed at all. Therefore, we propose an alternative hypothesis that argues that the governance index and the CPI is inflated. It is also very likely that the governance index captures too much of the local conditions, which is not inherently important considering tax haven status. Throughout the thesis, several examples reinforce our alternative hypothesis and shed light on the obscure truth about governance quality and tax havens.

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## A Explanation of data

**Governance Index:** measures the quality of institutions and traditions within a country and how they are being exercised. The political variable is constructed by Kaufman and Kray (2019), taking values between -2.5 and 2.5, where a high score indicates a well-governed country. The variable is normally distributed with a mean equal to zero and unit variance. The score is averaged across five indicators of institutions. These indicators are voice and accountability, political stability and absence of violence, government effectiveness, rule of law and control of corruption. The data is extracted from the Worldwide Governance Indicators web-page.

**Financial Secrecy Index:** is an annual political ranking of jurisdictions according to their degree of financial secrecy and world scale of offshore financial activity (Tax Justice Network, 2020b). The score is aggregated into one final score, where the secrecy component consists of qualitative data of laws, regulations, and exchange of information. In contrast, the financial activity component is a measurement of a jurisdiction's share of cross-border financial transactions provided to non-residents. The data is extracted from the Tax Justice Network web-page. Note that the Financial Secrecy Index has a cutoff point on the 31 December in the preceding year of the published version. Hence, the latest edition of the Financial Secrecy Index, published in 2020, is matched with 2019 data.

**Secrecy score:** is one of the two components making up the aggregated Financial Secrecy Index. It is a qualitative variable going from 0 to 100, and it measures a jurisdiction's transparency and willingness to cooperate and exchange information with other national authorities. A high score means low transparency and a low willingness to comply with international norms and standards to fight money laundering. On the other hand, a low score indicates a high degree of financial transparency and compliments towards international norms (Tax Justice Network, 2020b).

**Tax haven:** is a binary variable taking the value of 1 if the jurisdiction is classified as a tax haven, according to DH2009. If such a list had been created today, it would have been natural to add more tax havens.

**GDP per capita:** is the gross domestic product per year divided by the midyear population and adjusted for purchasing power parity to account for price differences across countries. The variable is expressed in the current international US dollar. The data is extracted from The World Data Bank. For jurisdictions that are missing data, the gaps are closed using data from the CIA's World Factbook, where the closest year is used if the exact year is not available.

**Population:** The data is extracted from the World Data Bank. For jurisdictions that are missing data, the gaps are closed using data from the CIA's World Factbook, where the closest year is used if the exact year is not available.

**UN member:** is a binary variable taking the value of 1 if the country is a member state of the United Nations organization at each of the five years included in the data-set. The data is extracted from the United Nations member state list.

**Landlocked:** is a binary variable taking the value of 1 if the country is landlocked. The data is extracted from Dempsey (2017).

**Corporate tax rate:** is the statutory corporate tax rate for each country. The data is extracted from

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KPMG (2020) and their worldwide corporate tax rates table.

**Corruption Perceptions Index:** measures the perceptions of corruption in a country's public sector, both political and administrative corruption. The variable takes values from 0 to 100, where 100 is equal to no corruption. The data is available for 176 countries from 2001 to 2019 and is extracted from Transparency International (2019).

**Business Freedom Index:** measures how efficient and effortless a business can be started, operated, and closed based on government regulation. The index is measured from 0 to 100, where 100 is equal to the most efficient and freest country to do business in (The Heritage Foundation, 2019). The data is available for 181 countries from 1995 to 2020 and is extracted from The Global Economy (2020).

**Regional dummies:** are binary variables created for Europe, Asia/Pacific, Central Asia, the Americas, Africa, and the Middle East. Country's are given the value of 1 for the region they belong to. The data is extracted from The World Data Bank.

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## B List of pre-defined tax havens

Table 6 shows the tax havens used to replicate DH2009. Initially, the list made by Hines and Rice (1994) contained 41 tax havens, but the governance index is missing for a few of these countries. Thus only 35 tax havens are applied.

**Table 6:** *Countries classified as tax havens*

<b>List of tax havens according to Dharmapala and Hines (2009)</b>		
Andorra	Grenada	Mauritius
Anguilla	Hong Kong	Panama
Antigua and Barbuda	Ireland	Samoa
Aruba	Jordan	Seychelles
Bahamas	Lebanon	Singapore
Baharain	Liechtenstein	St. Kitts and Nevis
Belize	Luxembourg	St.Lucia
Bermuda	Macao	St. Vincent and the Grenadines
Cayman Islands	Maldives	Switzerland
Cyprus	Malta	Vanuatu
Dominica	Marshall Islands	Virgin Islands (U.S)



## C VIF estimates

Multicollinearity is a frequent problem in regression analysis and occurs when there is a high correlation among regressors, leading to unreliable estimates (Allison, 2012). Multicollinearity is often measured by the variance inflation factor (VIF), which measures how much of a coefficient's variance is inflated because of linear dependencies with other variables. How high a VIF is accepted differ among researchers, but a common rule is that VIF's below five is accepted. According to Allison (2012), multicollinearity can safely be ignored for control variables (Allison, 2012).

Looking at Table 7 and 8, one can see that our regression results do not encounter any problems with regards to multicollinearity, as all VIF's are below 5.

**Table 7:** *VIF estimates for Table 3*

Variables	Column 2	Column 3	Column 4	Column 6
Governance index	2.9265	3.1865	2.6921	1.8175
Log of GDP per capita	3.3773	3.7564	3.1546	1.7568
Log of population	1.3886	1.4035	1.4571	1.3016
Corporate tax rate	-	-	-	1.2671
UN member	1.2261	1.2444	1.4571	-
Landlocked	1.2837	1.2658	1.1216	-
Europe	2.3535	2.6756	3.6791	-
Central/Asia	1.3776	1.4670	1.5421	-
Asia/pacific	1.4767	1.5470	1.9024	-
Americas	1.6892	1.7807	2.4552	-
Middle East	1.5453	1.5915	1.9721	-

**Table 8:** *VIF estimates for Table 5*

Variables	Column 3	Column 5
Corruption perception index	2.7944	2.0025
Business Freedom index	2.4614	-
Log of GDP per capita (PPP)	2.1486	1.9903
Log of population	1.1689	1.1499
Corporate tax rate	1.2314	1.2128

## D Additional regression results

Table 9 shows the governance index's five components, and where all the components have been run as a single fixed effects regression, with the Financial Secrecy Index as the dependent variable. Table 10 shows the governance index's five components, and where all the components have been run as a single fixed effects regression, with the secrecy score as the dependent variable. Table 11 is the same as Table 3, shown in subsection 4.1, but here the regional dummies are displayed.

**Table 9:** *Governance index components with the Financial Secrecy Index as the dependent variable*

	<i>Dependent variable:</i>				
	<b>Financial Secrecy Index</b>				
	(1)	(2)	(3)	(4)	(5)
Voice and Accountability	0.144 (0.296)				
Rule of Law		-0.156 (0.135)			
Government Effectiveness			0.087 (0.137)		
Political stability				0.068 (0.140)	
Control of Corruption					0.104 (0.187)
Observations	416	419	415	423	415
Number of countries	104	104	102	103	102
R <sup>2</sup>	0.001	0.006	0.001	0.001	0.002
Adjusted R <sup>2</sup>	-0.350	-0.341	-0.342	-0.338	-0.342
F Statistic	0.413	1.728	0.453	0.343	0.607

*Note:* The dependent variable Financial Secrecy Index is logged. Regulatory quality is disregarded due to potential multicollinearity issues. Clustered standard errors are in parentheses; \*significant at the 10 % level; \*\*significant at the 5 % level; \*\*\*significant at the 1 % level.

**Table 10:** Governance index components with the secrecy score as the dependent variable

	<i>Dependent variable:</i>				
	<b>Secrecy score</b>				
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
Voice and Accountability	1.495 (3.624)				
Rule of Law		-0.396 (1.415)			
Government Effectiveness			-0.382 (1.604)		
Political stability				1.310 (1.205)	
Control of Corruption					-3.567* (2.037)
Observations	416	419	415	423	415
Number of countries	104	104	102	102	102
R <sup>2</sup>	0.001	0.0003	0.0002	0.003	0.016
Adjusted R <sup>2</sup>	-0.350	-0.348	-0.344	-0.336	-0.322
F Statistic	0.309	0.078	0.061	0.898	5.089**

*Note:* Regulatory quality is disregarded due to potential multicollinearity issues. Clustered standard errors are in parentheses; \*significant at the 10 % level; \*\*significant at the 5 % level; \*\*\*significant at the 1 % level.

**Table 11:** Main regression results with regional dummies displayed

	<i>Dependent variable:</i>					
	Tax haven (=1)			Financial Secrecy Index		
	2004	2004	2019	2019	2010-2019	2010-2019
(1)	(2)	(3)	(4)	(5)	(6)	
Governance index	0.657** (0.256)	0.074** (0.033)	0.057 (0.039)	0.154 (0.128)	0.015 (0.304)	0.045 (0.307)
Log of GDP per capita	0.119 (0.216)	0.026 (0.031)	0.042 (0.038)	0.430*** (0.138)	0.652* (0.350)	0.623** (0.353)
Log of population	-0.402*** (0.078)	-0.068*** (0.013)	-0.070*** (0.013)	0.197*** (0.037)	0.032 (0.090)	0.035 (0.088)
UN member (=1)	0.444 (0.416)	0.014 (0.119)	0.034 (0.124)	-0.767* (0.442)		
Landlocked (=1)	0.082 (0.367)	0.001 (0.051)	-0.001 (0.051)	0.038 (0.228)		
Corporate tax rate						-0.027** (0.014)
Europe (=1)	2.381 (2.414)	-0.082 (0.071)	-0.122 (0.080)	-0.654** (0.264)		
Central Asia (=1)	3.711 (2.436)	0.098 (0.072)	0.056 (0.081)	-0.527* (0.307)		
Asia/Pacific (=1)	2.510 (2.184)	-0.003 (0.077)	-0.057 (0.080)	-0.203 (0.278)		
Americas (=1)	3.671 (2.315)	0.160** (0.069)	0.1390* (0.075)	-0.525** (0.220)		
Middle East (=1)	3.743 (2.751)	0.091 (0.115)	0.108 (0.120)	-0.129 (0.345)		
Africa (=1)	2.726 (2.221)					
Constant		0.944*** (0.323)	0.817** (0.376)	-1.214 (1.504)		
Model	Probit	OLS	OLS	OLS	Panel FE	Panel FE
Regional dummies	Yes	Yes	Yes	Yes	No	No
Observations	208	208	208	125	426	426
Number of countries	208	208	208	125	125	125
R <sup>2</sup>		0.355	0.343	0.375	0.017	0.026
Adjusted R <sup>2</sup>		0.322	0.309	0.320	-0.329	-0.322
Log Likelihood	-51.216					
Akaike Inf. Crit.	124.433					
Residual Std. Error		0.309	0.312	0.796		
F Statistic		10.842***	10.263***	6.829***	1.825	2.092*

*Note:* Robust standard errors in column 1 to 4 and clustered standard errors for column 5 and 6 in parentheses; \*significant at the 10 % level; \*\*significant at the 5 % level; \*\*\*significant at the 1 % level.

## E Additional tables and figures

Figure 6 plots the governance index for 2019 against the log of GDP per capita in 2019 for all countries in the panel data set. Tax havens by DH2009 are given in red, while all other countries are blue.

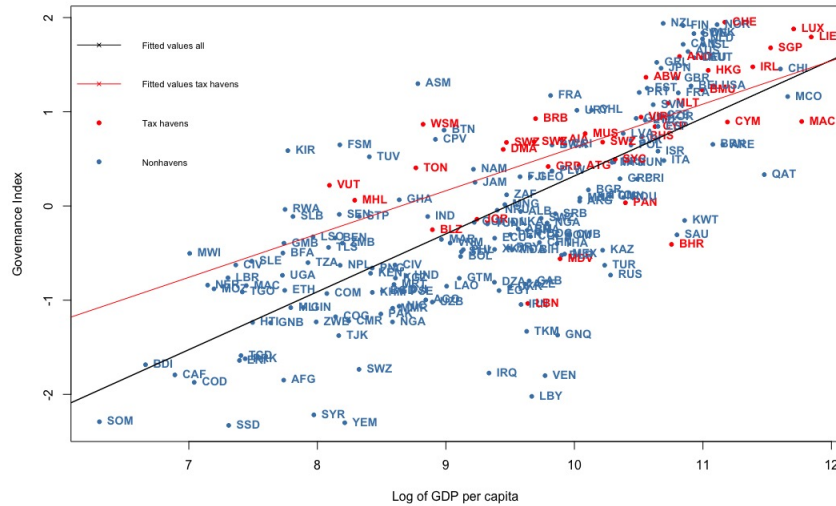


Figure 6: Plot of the governance index and GDP per capita for tax havens and nonhavens in 2019

Figure 7 plots the FSI value, from the latest edition of the Financial Secrecy Index in 2020, and the log of GDP per capita in 2019 for all countries in the panel data set. Tax havens by DH2009 are given in red, while all other countries are blue.

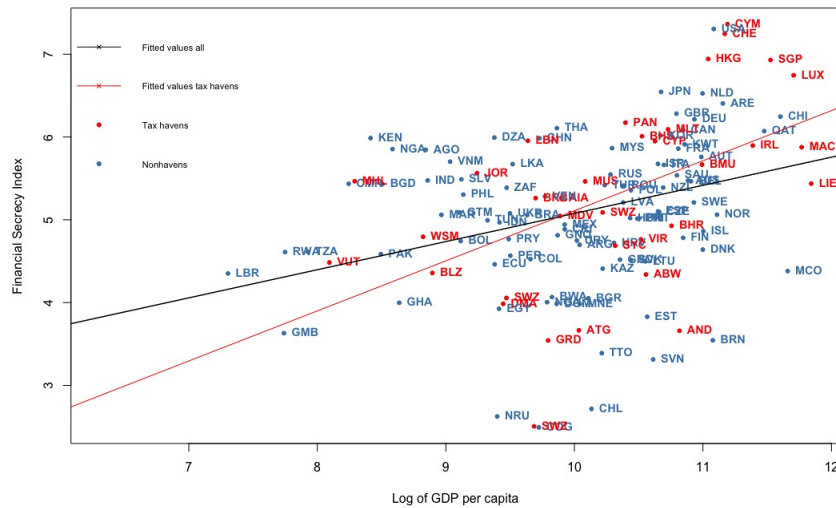
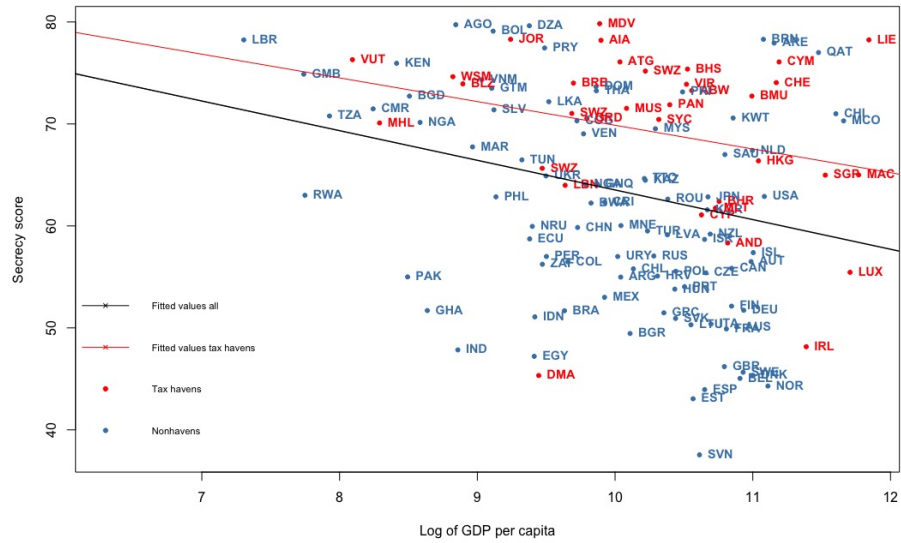


Figure 7: Plot of the Financial Secrecy Index and GDP per capita for tax havens and nonhavens in 2019

Figure 8 plots the secrecy score, from the latest edition of the Financial Secrecy Index in 2020, and the log

of GDP per capita in 2019 (in PPP terms, expressed in US\$) for all countries in our panel data set. Tax havens by DH2009 are given in red, while all other countries are blue.



**Figure 8:** Plot of the secrecy score and GDP per capita for tax havens and nonhavens in 2019

Table 12 shows the top 25 jurisdictions ranked by their respective FSI Values, while Table 13 ranks after the secrecy score. The data is collected from the latest released edition of the Financial Secrecy Index in 2020.

**Table 12:** *The top 25 jurisdictions on the Financial Secrecy Index*

<b>Financial Secrecy Index</b>	
Cayman Islands	1575
United States	1487
Switzerland	1402
Hong Kong	1035
Singapore	1022
Luxembourg	849
Japan	696
Netherlands	682
British Virgin Islands	619
United Arab Emirates	605
Guernsey	565
United Kingdom	535
Taiwan	508
Germany	500
Panama	480
Jersey	467
Thailand	449
Malta	442
Canada	438
Qatar	433
South Korea	411
Bahamas	407
Algeria	401
Kenya	398
China	397

**Table 13:** *The top 25 jurisdictions ranked by their secrecy score*

<b>Secrecy score</b>	
Maldives	80
Angola	80
Algeria	80
Bolivia	79
Jordan	78
Brunei	78
Liberia	78
Anguilla	78
United Arab Emirates	78
Turks and Caicos Islands	78
Paraguay	77
Qatar	77
Vanuatu	76
Cayman Islands	76
Antigua and Barbuda	76
Kenya	76
Bahamas	75
St. Kitts and Nevis	75
Liechtenstein	75
Gambia	75
Curacao	75
Samoa	75
Montserrat	75
Vietnam	74
Switzerland	74