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$$\frac{n!}{(n-1)!} p^{m-1} (1-p)^{n-m} = p \sum_{\ell=0}^{n-1} \frac{\ell+1}{n} \frac{(n-1)!}{(n-1-\ell)! \ell!} p^{\ell} (1-p)^{n-1-\ell} = p \frac{n-1}{n} \sum_{\ell=0}^{n-1} \left[\frac{\ell}{n-1} + \frac{1}{n-1} \right] \frac{(n-1)!}{(n-1-\ell)! \ell!} p^{\ell} (1-p)^{n-1-\ell} = p^2 \frac{n-1}{n} +$$

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The Progress of Global Financial Transparency: Evidence from The Financial Secrecy Index 2009–2018

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Abstract:

While financial secrecy has recently risen on the agenda of policy makers and scholars alike, much remains unknown about its development since the global financial crisis. To show how financial secrecy evolved over time on average, by category, and across countries, we combine the five Financial Secrecy Index editions from 2009 to 2018 to create a financial secrecy panel data set. We present four main findings. First, financial secrecy has decreased on average – i.e. that financial transparency has improved – by at least 2–9% between 2011 and 2018. Second, most of the observed improvement comes from international standards and cooperation, one of four key financial secrecy areas recognized by the Financial Secrecy Index. Third, we observe a convergence across countries between 2011 and 2018 – many of the most secretive have become less so while the opposite is true of some formerly less secretive countries. For example, the Seychelles are now only slightly more secretive than the Netherlands. Fourth, we find that changes in contributions to global financial secrecy over time are not tied to geographical regions and that it is thus worth studying changes at the individual country-level. For example, we find that the United Arab Emirates, the Netherlands and Malta have become substantially more important providers of financial secrecy, though they are still less important than the current leaders, i.e. Switzerland, the United States and the Cayman Islands. Having documented changes in financial secrecy over the past decade, we conclude with how the data set may be used as a tool for studying and perhaps even curbing financial secrecy – a policy objective which has thus far been only moderately met.

JEL: F36, F65, G28, H26, H87

Keywords: Offshore finance; financial transparency; financial secrecy; secrecy jurisdictions; tax havens

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1 Introduction

Financial secrecy – i.e. the lack of financial transparency – is increasingly recognised as a defining feature of today’s global economy, with individuals hiding their wealth offshore (Zucman, 2013) and companies devising secretive ownership structures (Haberly & Wójcik, 2015). This increasing recognition may be explained by two intertwined and non-exclusive phenomena: by increased interest on the part of both policy makers and scholars, and by an increase in financial secrecy itself. The former would mean that financial secrecy is being belatedly addressed as a concern by policy makers and as a research topic by scholars who are finally catching up with the pervasive phenomenon of financial secrecy. This is clearly the case when one looks, as we briefly outline below, at policy debates and scholarly literature published in the past several decades. On the other hand, the latter explanation indicates that financial secrecy is increasing in importance over time, thus attracting a correspondingly increasing level of attention. A test of whether this second explanation is plausible is so far lacking and it is the task that we set for ourselves in this paper.

This paper addresses the question of how financial secrecy changed since the 2008 global financial crisis. We are interested in learning about what large-scale shifts took place over the past ten years, if any, and whether financial secrecy offered by secrecy jurisdictions increased or decreased. Secrecy jurisdictions are countries which provide financial secrecy, such as bank secrecy or anonymous ownership of companies, to individuals and firms residing elsewhere. Not only do secrecy jurisdictions differ with respect to the categories of financial secrecy they provide, they also differ in their reactions to the recently increasing pressure by other countries to curb financial secrecy. In addition to tracking global trends, we also aim to shed new light at a more detailed level, answering questions such as which categories of financial secrecy have become more – or less – important and which secrecy jurisdictions have risen or fallen in importance. We thus develop four specific hypotheses on financial transparency rise, international cooperation importance, convergence across secrecy jurisdictions and a geographical shift towards Asia, detailed in Section 2 below, while first providing an overview of relevant literature.

Existing research provides some guidance relevant to our hypotheses, some of which state that we expect specific secrecy jurisdictions to have become more secretive while the opposite is likely in the case of others. For example, Haberly & Wójcik (2016) identify specific jurisdictions, including the Cayman Islands, behind the global financial crisis-implicated securitization. Clark, Lai, & Wójcik (2015) hypothesise that the financial crisis might be bad news for the most obvious tax havens, like the Cayman Islands, but may be good news for countries and financial centres less associated with their functions as offshore jurisdictions, such as the Netherlands, Ireland, the United Kingdom, Hong Kong, or Singapore. Alternatively, Johannesen & Zucman (2014) suggest that the least compliant secrecy jurisdictions have risen in importance and that there may be an incentive for jurisdictions to withstand the pressure for more transparency, even though direct resistance may be exceedingly politically costly. The strategy of choice may consist of “mock compliance” (Woodward, 2016), where jurisdictions

tick the specific boxes of imposed requirements but in effect avoid engaging in meaningful reform. For example, when the OECD demanded in 2009 that all “white listings” sign at least twelve tax information exchange agreements, many small island ‘tax havens’ started signing such exchange agreements among themselves (Shaxson & Christensen, 2011). As a result, some jurisdictions may be expected to have actually increased their degree of secrecy, or have at least remained stagnant. A limited body of evidence are available in the case of some secrecy jurisdictions. For example, Emmenegger (2017) explains how Swiss resistance to international cooperation in tax matters was overcome, which points to a decrease in Swiss secrecy. In contrast with existing research publications, the approach we adopt in this paper is more general and covers a wider range of countries and financial secrecy categories than previously examined.

In order to explore how secrecy jurisdictions changed since the global financial crisis, we develop a new methodological approach and create a new panel data set. Information on financial secrecy is scarce and no systematic cross-country indicator of financial secrecy was available prior to the launch of the Financial Secrecy Index (FSI) by the non-governmental Tax Justice Network in 2009. This paper builds on all five editions of the FSI, published between 2009 and 2018, which are used as source material for the development of a financial secrecy panel data set. We describe in detail how we deal with methodological challenges arising from changes in FSI methodology and country coverage. We assess the compatibility of individual indicators which form secrecy scores, i.e. the qualitative component of the FSI, and use them to compile a panel data set of secrecy scores suitable for evaluating changes in financial secrecy over time. We argue that all changes to the methodology used for constructing secrecy scores pushed them towards stricter definitions as international transparency standards evolved over time. We compare how individual countries’ secrecy developed in each of the four categories set out by the FSI secrecy scores, identifying countries which became more secretive over time as well as those that improved their transparency. Furthermore, we express secrecy scores in relative terms to simplify the comparisons of secrecy jurisdictions relative to each other over time. The resulting data set sheds new light on research questions associated with the development of financial secrecy over time and enables us to make contributions to three strands of existing literature.

First and most generally, we strive to contribute to the emerging and still relatively small body of literature on financial secrecy. Research focusing exclusively on financial secrecy is a relatively novel area. While debates on offshore finance and tax havens date back decades (e.g. Palan, Murphy, & Chavagneux, 2010, Wojcik, 2012), financial secrecy itself has generally been relegated to an addendum to discussions of tax or money laundering issues (e.g. Gordon & Internal Revenue Service – US Treasury, 1981). More recently, in the OECD (1998) harmful tax competition report, the “lack of effective exchange of information”, an example of excessive financial secrecy, constituted one of four key criteria designed to identify tax havens. In the same year, a report to the UN Office for Drug Control and Crime Prevention emphasized the role played by financial and banking secrecy in the laundering of crime and corruption proceeds (Blum, Levi, Naylor, & Williams, 1998). Since then, we observe an increase in research focusing on financial secrecy, especially after the global financial crisis. This is indicated by a

brief and pointed retrospective by Cloke & Brown (2019) as well as by a more comprehensive review, which also incorporates taxation, by Aalbers (2018) in the area of economic geography. In international political economy, this trend is indicated in reviews by Dietsch & Rixen (2016) and Christensen & Hearson (2019). However, none of these – or indeed any of the research papers they review – provide a quantified evaluation of financial secrecy development during the period in question.

Second, we aim to contribute to literature addressing the development of financial secrecy since the global financial crisis, which, together with recent offshore leaks, provided an impetus for policy makers to counter financial secrecy and for scholars to study it. On the policy side, world leaders at G20 and G7 meetings have arrived at a rhetorical consensus in favour of greater international financial transparency, though it has often been difficult to learn to what extent the commitments translated into real policy and regulatory changes. For example, tax information exchange upon request was heralded by policy makers to be the end of banking secrecy in 2009 (Johannesen & Zucman, 2014), but only the subsequent automatic information exchange represents a significant step towards financial transparency (Hakelberg, 2016). In terms of research, O'Donovan et al. (2019), for example, showed that the Panama Papers erased \$135 billion in the market capitalization of approximately 400 companies which they have designated as users of offshore vehicles exposed in the leak, while additional research has focused on data obtained from these leaks (Alstadsaeter, Johannesen, & Zucman, 2018; Caruana-Galizia & Caruana-Galizia, 2016). At present, financial secrecy has been established as an element pervasive throughout the global economy (Garcia-Bernardo, Fichtner, Takes, & Heemskerk, 2017) and provided not only by peripheral small island states but also by major economies (Sharman, 2011). Nevertheless, a geographically informed view of financial secrecy remains underdeveloped as far as its development over time is concerned.

Third and most specifically, we strive to contribute to literature focusing on indicators evaluating financial secrecy across countries and over time. Most of the literature discussed above provides an evaluation of financial secrecy at a single point in time. When existing literature does focus on evaluation over time, it lacks the country coverage which would facilitate the tracking of numerous secrecy jurisdictions over time. A case in point is a study by Fichtner (2016) which uses data for nine segments of global finance from 2000 to 2014 to show Anglo-America's dominant structural power in global finance. The FSI, which spans a decade and covers over 100 countries in the latest edition, thus represents a major breakthrough. Alongside other non-governmental organisation benchmarks, Seabrooke & Wigan (2015) consider the FSI to constitute a form of symbolic violence designed to place political pressure on firms, states, and international organisations. In economic geography the FSI was first introduced by Cobham, Janský, & Meinzer (2015) who propose a financial secrecy spectrum capable of accommodating all listed countries. Further research using the FSI includes its application for evaluating automatic information exchange (Janský, Meinzer, & Palanský, 2018) and estimating vulnerability to illicit financial flows (Abugre et al., 2019). While existing research has used FSI results for a single year, we aim to combine several editions of the FSI in order to develop the best possible tool for evaluating the development of financial secrecy

over time. By creating and exploiting the tool, we are able to test specific hypotheses outlined in the following section.

The remainder of the paper is structured as follows: Section 2 outlines four specific hypotheses. Section 3 explains the methodology and, in particular, the data used to construct a panel data set of financial secrecy, with additional technical details provided in the Appendix. Section 4 discusses the results and the main observed patterns of financial secrecy over time. The final section concludes with a discussion of implications for policy and further research.

2 Hypotheses

In this section we briefly introduce a simple theoretical framework we employ in order to develop hypotheses subsequently empirically tested in this paper. We propose hypotheses that predict, or retrospectively explain, changes in financial secrecy over time, drawing on reviewed literature and other available sources of information. In this theoretical framework we assume that a secrecy jurisdiction chooses its intensity of financial secrecy (secrecy score, *SS*) which it offers to individuals and companies resident in other countries, who in turn choose, possibly at least partly in reaction to the *SS*, the scale of its use (global scale weight, *GSW*). The combination of the two components, the *SS* and the *GSW*, determines the overall contribution to global financial secrecy by a secrecy jurisdiction (Financial Secrecy Index, *FSI*). In simple terms, we assume that both the *SS* value and its changes over time are determined by secrecy jurisdictions while *GSW* is determined by its users, and the contribution, *FSI*, is co-determined by the two factors. We outline four specific hypotheses complete with predictions for *SS*, *GSW* and *FSI* values and their changes over time below.

1. **Financial transparency hypothesis.** We hypothesise that financial secrecy has decreased globally, partly due to the revelations of the global financial crisis and offshore leaks and the subsequent backlash against financial secrecy and newly introduced financial transparency policy measures. Among other factors, this is the outcome of formal international agreements as well as formal (e.g. EU tax haven black lists) and informal (e.g. proclamations made by individual countries or by the G7 or G20) pressure exerted by countries on secrecy jurisdictions in order to increase financial transparency and move towards a level playing field. This hypothesis is consistent with *SS* decreases on average and for most secretive secrecy jurisdictions in particular.
2. **International cooperation hypothesis.** Much of the increase in financial transparency occurred due to increased international cooperation, which intensified following both the global financial crisis and the release of offshore leaks. This is partly because secrecy jurisdictions are easier to monitor once they subscribe to international cooperation instead of implementing changes on an exclusively domestic basis. This hypothesis is consistent with *SS* decreases in particular in the case of international standards and cooperation, one of the four financial secrecy categories recognised by the *FSI*.
3. **Convergence hypothesis.** While financial secrecy decreased in the case of many of the most secretive jurisdictions (financial transparency hypothesis), the less secretive ones were not required to change much to comply with international agreements. They were also under

less pressure from other countries to increase their own financial transparency. In addition, some of these less secretive secrecy jurisdictions responded to the explicit definition of the level playing field by moving closer to it, thus not increasing or even decreasing financial transparency. As a result, less secretive and more secretive secrecy jurisdictions are becoming increasingly similar. This hypothesis is consistent with SS convergence across countries over time.

4. **Geographical shift hypothesis.** We expect that secrecy jurisdictions located in specific regions or supplying financial secrecy to specific regions, such as South East Asia, which are undergoing a relatively high degree of economic growth, will become increasingly significant over time. This hypothesis is consistent with increases in the FSI of specific secrecy jurisdictions relative to the world total and with their contributions to global financial secrecy, e.g. Hong Kong and Singapore in the case of Asia.

We test these hypotheses in the results section (Section 4), utilising the methodology and financial secrecy panel data set described below (Section 3).

3 Data and methodology

A review of existing scholarship on financial secrecy and transparency clearly positions the FSI as a unique and, above all, most comprehensive indicator of financial secrecy available for a number of countries and over time. The FSI ranks jurisdictions according to their contribution to the global financial secrecy problem, measured using secrecy scores (SS) collected on the basis of detailed qualitative research, and the scale of their offshore financial activities, approximated quantitatively according to global scale weight (GSW), calculated using data on financial services exports and other relevant data.

In this section we describe in detail the construction of a financial secrecy panel data set, based mostly on SSs listed in each of the five individual editions of the FSI, published in 2009, 2011, 2013, 2015 and 2018. With each edition, the Tax Justice Network authors of the index publish a detailed methodology describing the construction of each individual indicator, the so-called Key Financial Secrecy Indicators (KFSIs), which are then used to derive the overall SS of each studied country (Tax Justice Network, 2009, 2011, 2013, 2015, 2018). This and other detailed information available for the FSI facilitates its detailed consideration and enables us to create a panel data set using the FSI as the basis. On a conceptual level, combining the five editions of the FSI should provide us with a usable tool for tracking the development of financial secrecy. While possible, the practical application of this concept does present certain noteworthy complications, which are described below. The two principal concerns arising when using SSs to construct a financial secrecy panel data set include changes in country coverage and methodology changes. The following paragraphs focus on how we approach the former while issues surrounding the latter form the topic of a large part of the remainder of this section.

FSI country coverage has increased gradually with each subsequent edition. It went up from 60 jurisdictions in 2009 to 73 in 2011, 87¹ in 2013, 102 in 2015, to 112 jurisdictions included in the 2018 edition. Table 1 summarizes the country coverage of each edition, changes in coverage made to each edition in comparison to the previous one, and the overlap of each edition with the previous one. For example, the only reduction in country coverage occurred in FSI 2015², while the dissolution of the Netherlands Antilles did not lead to its exclusion from our panel data set³. Naturally, while we would ideally like to compare all five editions of the FSI for all 112 countries considered in the 2018 edition, the overlap shrinks as we retrospectively add more editions to the comparison. In this paper we generally follow the rule that we make our comparisons using the largest possible common set of overlapping countries. We argue below that due to methodological reasons, SSs are generally comparable in a more straightforward way if we disregard the 2009 edition and start only with the 2011 edition, which overlaps with the 2018 edition for 73 jurisdictions – and we thus often use this set of countries in our comparisons. We now turn to describing the second challenge of constructing a panel data set of financial secrecy: methodology changes.

Table 1: FSI country coverage

	FSI 2009	FSI 2011	FSI 2013	FSI 2015	FSI 2018
Countries covered	60	73	87	92	112
Change over previous edition	—	+13	+14	+13	+20
		-0	-0	-3	-0
Overlap with previous edition	—	60	73	79	92

Source: Authors, based on FSI results.

Almost no changes in GSW have taken place across the individual FSI editions. While our focus in this paper is on SS values and their comparability over time, we also utilise final FSI values for selected comparisons. These constitute a straightforward extension of the SS panel data set, since the methodology for calculating the GSW, i.e. the quantitative part of the FSI, has not changed over the years and the results are thus fully comparable without any adjustments. Nevertheless, we do recalculate the GSW values before combining them with the SS values – and in doing so, we use updated data for the same year for which the SSs were

¹ The original FSI 2013 edition included 82 jurisdictions, but FSI scores were produced in 2014 for 5 additional jurisdictions for the purpose of the FSI's inclusion in the Center for Global Development's Commitment to Development Index (Janský, 2015). We include these 5 jurisdictions in our analysis along with the 82 jurisdictions.

² Nauru, Dominican Republic and Maldives were dropped from the 2015 edition of the FSI due to data unavailability but were subsequently reinstated in the 2018 edition.

³ The 2013 edition dropped the Netherlands Antilles, which were included in both the 2009 and the 2011 versions, but which were dissolved on 10 October 2010 and have thus been excluded since. As a result of the dissolution, Curaçao and Sint Maarten became distinct constituent countries whereas Bonaire, Sint Eustatius, and Saba (the so-called BES Islands) became special municipalities within the Netherlands proper. Curaçao has been included in the FSI since 2013, and because it has been by far the most important offshore hub of the former Netherlands Antilles (e.g. according to data from the IMF's Balance of Payments Statistics, in 2012, the value of Sint Maarten financial services exports amounted to less than 0.5% of that of Curaçao), it is considered to constitute a direct successor of the Netherlands Antilles for the purposes of our time series.

collected, rather than lagged data used in the FSI.⁴ To combine the SS and the GSW, we use the same cube and cube-root transformation which has been in place since the first edition of the FSI (Tax Justice Network, 2018).

The qualitative part of the FSI, the SSs, have undergone significant changes in methodology across the five editions. The SSs are constructed as arithmetic averages of a number of the so-called key financial secrecy indicators (KFSIs). Two main challenges arise when comparing individual KFSIs over time. First, the number of KFSIs used to construct the SSs increased from 12 in 2009 to 15 in 2011–2015 to 20 in the 2018 edition, as summarised in the first row of Table 2. Over time, some KFSIs were dropped and new ones were added to increase the scope of the data set and to reflect evolving transparency standards. The second challenge is that, in some cases, the definitions of the KFSIs themselves changed, once again in order to increase the level of sophistication and to reflect the evolving standards of what is considered transparent.

Table 2: SS methodologies across FSI editions

	FSI 2009	FSI 2011	FSI 2013	FSI 2015	FSI 2018
Number of SS indicators (KFSIs)	12	15	15	15	20
Estimated SS compatibility with previous edition	—	20%	90%	90%	70%
Estimated SS compatibility with 2018 edition	20%	60%	70%	70%	100%

Source: Authors, based on FSI results.

We investigate in detail the methodological changes made to SSs over time, quantifying them to the best of our abilities. In constructing the panel data set, we adopt the 2018 edition of the SS as a base and compare individual KFSIs retrospectively.⁵ In the last two rows of Table 2 we summarize the comparability of SS across the different FSI editions as we estimate it based on the analysis presented in detail below and, in more detailed form, in Appendix B. The methodology has undergone major changes primarily between the 2009 and 2011 editions, making the 2009 SS set difficult to compare with subsequent editions. From that point on, however, only minor changes were made with respect to the KFSIs between the 2011, 2013 and

⁴ For example, the 2015 edition of the original FSI uses data on financial services exports for 2013 because data for 2015 were not available at the time of publication of the FSI 2015; in contrast, we use data for 2015. In addition, further research could reconsider the GSW estimation methodology more thoroughly with novel data sources. A case in point are the British Virgin Islands and the Seychelles, which have more servers per capita than any other jurisdiction (Haberly, MacDonald-Korth, Urban, & Wójcik, 2019).

⁵ In principle, at least for some of the KFSIs, it would be possible to make them directly comparable over time by using the 2018 methodology and tracing the necessary information and data retrospectively. However, at least two challenges impede this approach. First, for a number of KFSIs, the data is not traceable retrospectively since the relevant sources either did not exist at the time or are no longer available. Second, as the standards and understanding of transparency and secrecy have evolved over time, retrospectively subjecting jurisdictions to an evaluation based on present standards may no longer be plausible. Empirically, this would lead to most jurisdictions showing very high SS values with limited variability over time. We therefore analyse the development of the methodology of each KFSI individually for each existing FSI edition, thus leaving the task of retrospectively applying the 2018 methodology to the data set for future research.

2015 editions, ensuring relatively straightforward comparability. In the 2018 edition, seven entirely new indicators were added while some of the existing ones were transformed or dropped, increasing the number of indicators to 20. Consequently, the numbering of the individual indicators has changed across the editions and we describe how in Appendix B and in Figure A9. Furthermore, some of the definitions of individual indicators underwent alternations, discussed below along with their relevant implications.

We also assess comparability at the more detailed level of individual KFSIs. Table 3 describes the comparability of SSs in some detail, suggesting which of the 20 KFSIs are retrospectively compatible. For each indicator and each edition, we provide a rough estimate of the extent of direct indicator comparability with the 2018 version. An estimate of 0% compatibility implies that no comparable information exists for the KFSI in question, while an estimate of 100% implies that the indicator remained the same. We also provide averages across four categories: the first (Ownership registration), the second (Legal entity transparency), the third (Integrity of tax and financial regulation) and the fourth category (International standards and cooperation).

Table 3. Estimate of the compatibility of KFSIs with the 2018 edition

KFSI	Category/indicator	2009	2011	2013	2015
	Ownership registration				
1	Bank secrecy	20%	90%	90%	90%
2	Trust and foundations register	20%	20%	90%	90%
3	Recorded company ownership	20%	20%	20%	20%
4	Other wealth ownership	n/a	n/a	n/a	n/a
5	Limited partnership transparency	n/a	n/a	n/a	n/a
	Category average	12%	26%	40%	40%
	Legal entity transparency				
6	Public company ownership	60%	80%	80%	90%
7	Public company accounts	80%	80%	80%	90%
8	Country-by-country reporting	n/a	90%	100%	100%
9	Corporate tax disclosure	n/a	n/a	n/a	n/a
10	Legal entity identifier	n/a	n/a	n/a	n/a
	Category average	28%	50%	52%	56%
	Integrity of tax and financial regulation				
11	Tax administration capacity	n/a	60%	60%	60%
12	Consistent personal income tax	n/a	n/a	n/a	n/a
13	Avoids promoting tax evasion	n/a	100%	100%	100%
14	Tax court secrecy	n/a	n/a	n/a	n/a
15	Harmful structures	25%	50%	50%	50%
16	Public statistics	n/a	n/a	n/a	n/a
	Category average	5%	30%	30%	30%
	International standards and cooperation				
17	Anti-money laundering	20%	100%	100%	100%
18	Automatic information exchange	60%	80%	80%	80%
19	Bilateral treaties	60%	90%	90%	90%
20	International legal cooperation	n/a	95%	95%	95%

Category average	35%	91%	91%	91%
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Source: Authors.

Notes: Since no older comparable versions exist for newly added indicators, such instances are marked as “n/a”.

We argue that all changes to the FSI methodology made between the consecutive editions pushed the assessment of the indicator in question towards a stricter one. We make this argument here and we present the supporting evidence in Appendix B, where we consider each indicator within the four categories of indicators separately and describe their development over time in detail. Given the existing literature and other observations, the SSs becoming stricter is meaningful to us – the standards of what the terms “transparent” and “secretive” mean evolve over time and indicator definitions enshrined in FSI methodology have reflected this trend. While the standards of transparency may be perceived as improving continuously over time, the FSI methodology naturally incorporates these developments in a discrete manner with each consecutive edition by adjusting indicator definitions or by adding new and dropping old obsolete indicators. Therefore, if the FSI methodology is indeed becoming stricter, then the SSs staying constant would imply that financial transparency actually improved, while decreasing SS values would represent estimates of the lower bound of actual improvement. In other words, if the SS becomes stricter, these changes inflate a given SS, even if the secrecy level is subject to no real development. If, on the other hand, SS values increased, we would not be able to assess the actual development of financial transparency. To overcome this issue and to be able to compare SSs across jurisdictions and time, we introduce relative measures of secrecy.

Considering SSs relative to other countries rather than in absolute values is useful given the inherent data limitations. We estimate relative measures of secrecy, expressed relative to other countries’ SSs (or FSI values), rather than considering absolute values. We use two main sets of relative measures – one for SS and one for FSI values. For SS values, we use the ratio of each country’s SS to the sample mean for a given year. We thus arrive at the relative position of each country within the distribution of all countries. For year y and jurisdiction i , we therefore define its relative SS as:

$$SS_{yi}^{rel} = \frac{SS_{yi}}{\sum_{i=1}^n SS_{yi}}$$

where n is the number of countries for which the comparison over time is carried out. In this paper, we will focus primarily on comparisons of 71 countries with available data for the four editions published between 2011 and 2018.

For FSI values, we define the relative FSI value as the share of each jurisdiction’s FSI value of the total FSI value of all compared countries, i.e. once again the same set of 71 jurisdictions:

$$FSI_{yi}^{rel} = \frac{FSI_{yi}}{\sum_{i=1}^n FSI_{yi}}$$

Yet another concern is relevant to the evolving definitions of the SS, particularly between the 2015 and 2018 editions. As some entirely new indicators have been added to the SS, in 2018 in

particular, not only may the new information inflate or deflate SS values without any real influence on the level of secrecy, it can do so heterogeneously across countries. For example, consider the first category of indicators, i.e. Ownership registration. Two new KFSIs, the fourth and the fifth in Table 3, focusing on areas of secrecy which had not been covered by the 2015 SS, were added in the 2018 edition. If a country is secretive in the first three indicators of the Ownership registration category (Table 3) but transparent in the remaining two, its 2018 SS will decrease even if no development has taken place. To tackle the issue, we construct a second set of adjusted SSs for 2018. This “adjusted SS” data set only takes into account the thirteen indicators included in the FSI since 2011. With the help of these adjusted SSs, we can easily see whether newly added indicators inflate or deflate the SS values.

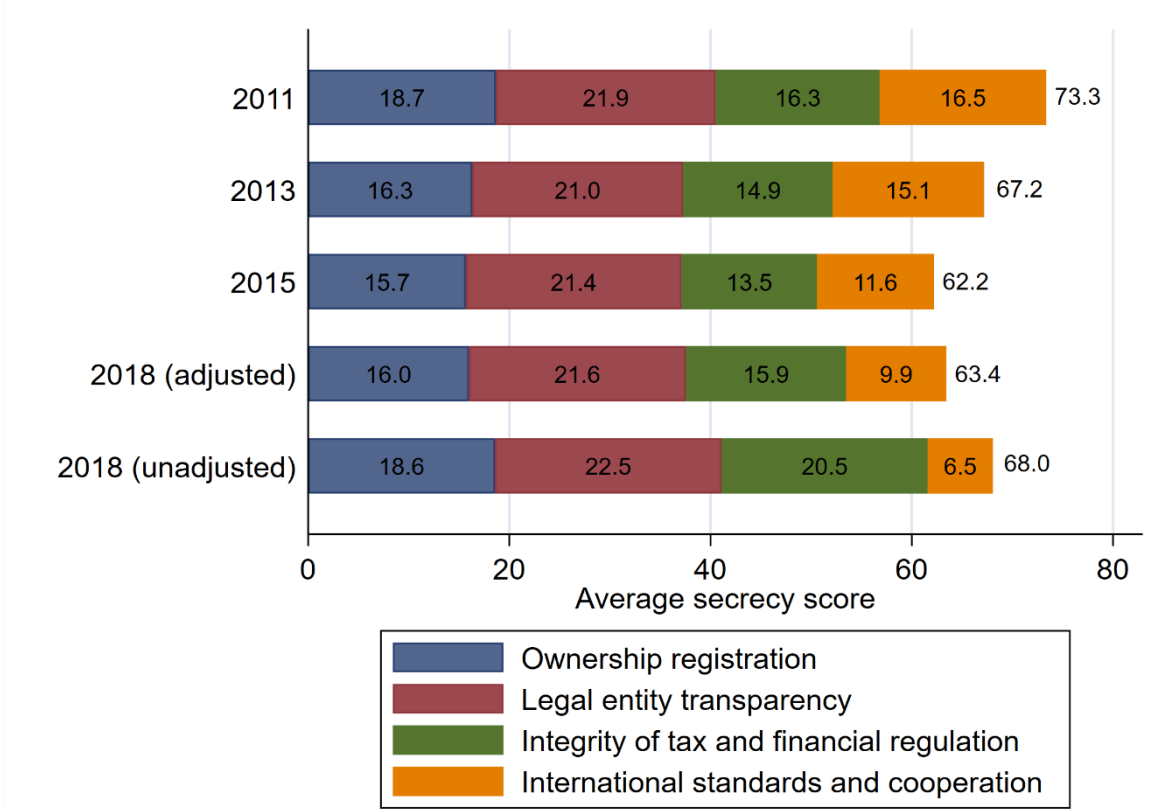
Overall, three forces influence changes in the levels of secrecy offered by each jurisdiction as measured using SSs. First, methodological changes to existing indicators push the scores upwards so that the SSs of jurisdictions actually increase over time for countries which do not change their laws in any way (as described in more detail in Appendix B). We employ relative measures of secrecy to deal with this issue. Second, the addition of new indicators could bias our SSs either upward or downward if the values of these indicators systematically differed from existing ones. This concern is particularly important, as we describe above, for changes between the 2015 and 2018 editions. To handle this issue, we construct an adjusted version of the SSs and compare them against the full SS data set to determine whether the newly added indicators increase or decrease the full SS data set. Third, the legislation of countries has evolved over time – either towards greater or lesser secrecy – and these changes directly affect the SS. These effects are what we would ideally like to isolate and track. Apart from collecting an entirely new data set, we do not see a straightforward way of systematically distinguishing between the three effects, and we thus argue that an analysis of the development of SSs of individual countries over time is of limited usefulness. What is more useful, however, and we therefore rely on it in this paper, is a difference-in-difference analysis of the development of the SSs of countries in relative terms, i.e. as compared to the development of the SSs of other countries.

Furthermore, we argue that a useful level at which to carry out the comparisons are the four categories of indicators defined by the FSI. This is due to several reasons. First, as compared to using SSs in general, there is a reasonable level of detail involved in the analysis of the four categories. This allows us to capture the heterogeneity of secrecy which jurisdictions provide: while some secrecy jurisdictions, such as Switzerland or Malta, focus primarily on bank secrecy, others, such as the Cook Islands or Trinidad and Tobago, are more secretive in the area of legal entity identification. On the other hand, compared to the utilization of individual KFSIs for making comparisons, averaging at category level smooths over spikes caused by discrete developments in legislation as well as by the definitions of individual indicators. And, while keeping in mind the limitations posed by the issues of coverage and methodological changes outlined above, it is at this level of the four categories that we now present our results.

4 Results

Deriving our findings from the new financial secrecy panel data set, we start by comparing the average SS values of all assessed jurisdictions over time. Figure 1 shows the average SSs for all 71 jurisdictions included in the last four editions of the FSI. Between 2011 and 2018, we find that the intensity of financial secrecy has decreased on average, i.e. that financial transparency has improved. This finding holds true regardless of whether we use the lower (adjusted) or the higher (unadjusted) value for 2018. The average SS decreased from 73.3 in 2011 to 63.4 (adjusted) or 68.0 (unadjusted) in 2018; these changes correspond to improvements in financial secrecy of 14% and 7% respectively.

Figure 1: Average SSs over time in four secrecy categories



Source: Authors.

Notes: Results for 71 countries for which SSs are available across all four editions. Numbers show the values of SSs for each of the four categories as well as the total. 2018 (adjusted) only takes into account the thirteen indicators which have been included in the FSI since 2011 rather than the twenty indicators available in 2018.

From 2011 to 2015, when the methodology used for three subsequent editions remained largely stable, we observe a decrease in the average overall SS as well as in each of the four secrecy categories. As we argued in the previous section, the small number of changes implemented in this period focused primarily on making the assessment of jurisdictions’ secrecy stricter. Any decrease in the average secrecy score thus represents a lower bound of the actual decrease in secrecy. And since the average harmonized secrecy score decreased from 73.3 in 2011 to 62.2 in 2015 (a 15% decrease), we can confidently infer that the overall global secrecy level decreased by at least 15% between 2011 and 2015.

From 2015 to 2018, in contrast with the preceding period, we observe an SS increase. Figure 1 shows an increase in both the adjusted 2018 SS values and the unadjusted 2018 SS values. Average SS increased from 62.2 in 2015 to 63.4 (adjusted) and 68.0 (unadjusted) in 2018, which corresponds to a 2% and 9% increase, respectively. We thus find, in accordance with the FSI's stated objective to highlight harmful secrecy regulations (Tax Justice Network, 2018), that the seven newly added indicators have focused on areas in which the studied countries do not fare very well relative to other areas. As a result, the inclusion of the seven new indicators increases the average SS across the 71 jurisdictions by 4.6 points, i.e. from 63.4 to 68.0.

We further observe that the four areas of financial secrecy have developed differently over time, as shown in Figure 1. The Ownership registration and Integrity of tax and financial regulation categories changed only moderately, with very small variation observed in the Legal entity transparency category. On the other hand, we report a significant decrease in the International standards and cooperation category – in fact, two thirds of the decrease in the average SSs between the 2011 and adjusted 2018 editions may be attributed to this category. At the same time, this category has remained the most stable in terms of its component indicator definitions. Within this category, the indicators which focus on the automatic exchange of information, bilateral treaties and international legal cooperation have contributed most to the increase in transparency. This development is at least in part attributable to the OECD's efforts in this area: for example, following the 2014 adoption of the automatic exchange of information standard, around 4,500 bilateral exchanges have been implemented as of November 2018 (OECD, 2018a). Overall country results summarized in Figure 1 are presented at country level in Figure 2.

With respect to the level of financial secrecy established in the case of individual countries, we observe a convergence across countries between 2011 and 2018. Many of the most secretive countries have become less secretive while some of the less secretive countries have become relatively more secretive. Figure 2 details which countries increased and decreased their SSs between 2011 and 2018 as relative to the sample mean for a given year⁶. In general, we observe that most countries have converged towards the sample mean: the standard deviation of the sample was 0.203 in 2011 and 0.155 in 2018. To investigate this statistically, we report an F-test p-value of 0.013, which is consistent with rejecting the null hypothesis of equal variances at the 5% level of significance, while tests of additional pairs of years suggest that convergence has occurred and is statistically confirmed between 2015 and 2018 in particular. Furthermore, most countries with the highest SSs in 2011 have since improved, with the notable exceptions of Vanuatu, Brunei and the Bahamas. On the other hand, several countries which were among the most transparent in 2011 have since been surpassed by others – most notably the Netherlands, Malta and Denmark. Indeed, in 2018 the Netherlands were almost as secretive as the Seychelles. The greatest SS increase was registered in the case of the United Arab Emirates,

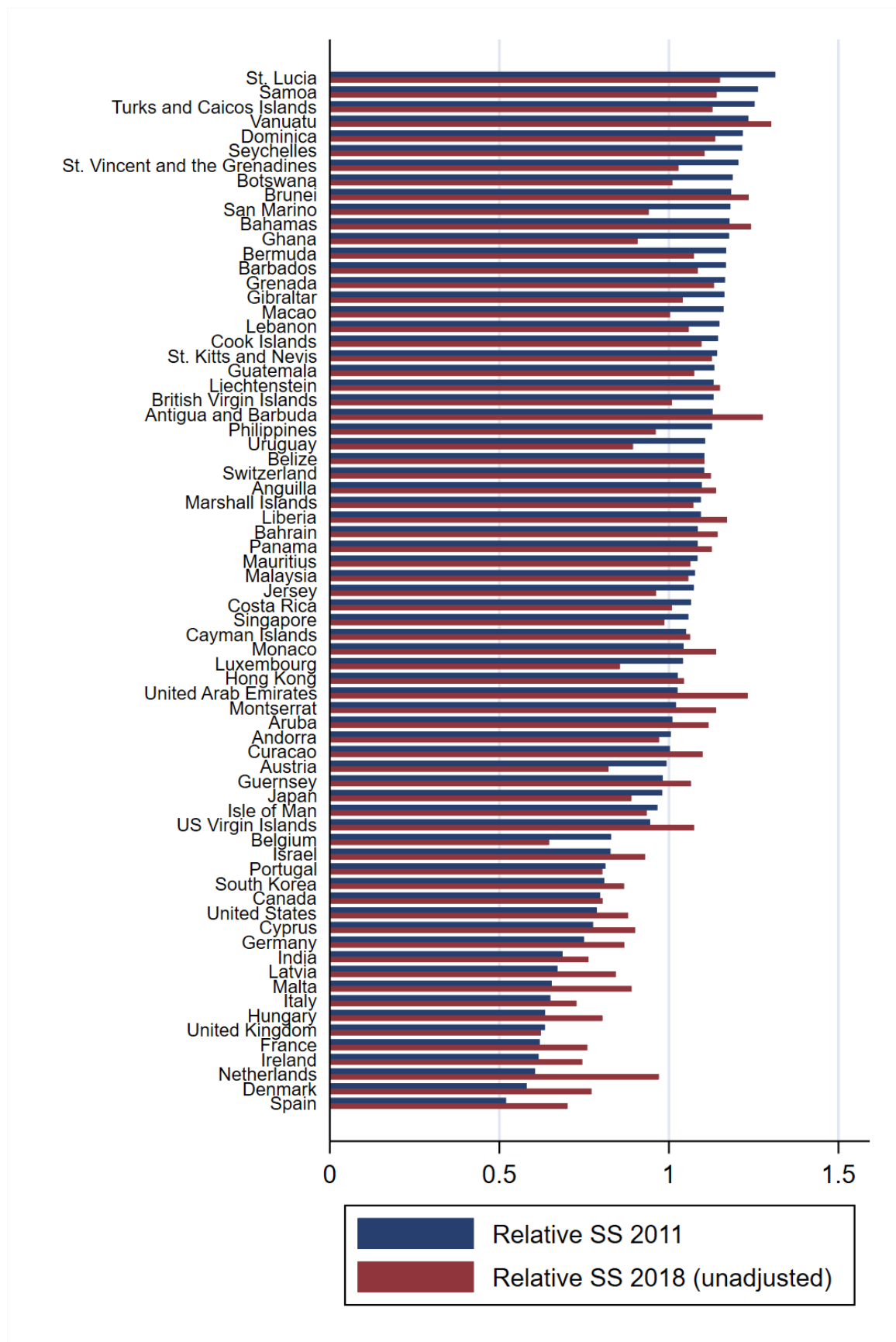
⁶ We include a similar graph which compares the 2018 edition with the 2009 edition for a sample of countries assessed in both of these editions in Figure A1 in the Appendix A. While 2009 and 2018 editions are not quite as comparable as the 2011 and 2018 editions, evidence of convergence to the sample mean was established in this case as well. Due to the low comparability of the 2009 edition, this is the only graph in this version of the paper which includes that edition; however, it is naturally included in the available underlying data set for the sake of completeness and for potential use in further research.

which moved from 43rd place in 2011 to 5th in 2018 with an SS increase from 102% to 123% of the sample mean. Overall, though countries converged from a global point of view, each changed in its own way.

We found countries to differ with respect to both the scale of changes and the financial secrecy category these changes affected. Figure A2 in Appendix A ranks individual countries according to SS changes between 2011 and 2018. The Netherlands, Malta, and Denmark top the list of countries which have become relatively more secretive. On the other side of the spectrum, Ghana, San Marino, and Uruguay have reduced their SSs the most over this period of time. In Figure A3 in Appendix A we take a closer look at which categories most contributed to these changes. We observe that, in accordance with findings shown in Figure 1, most countries have improved significantly in the fourth category, i.e. International standards and cooperation, and some have become more transparent and some more secretive with respect to Ownership registration and Integrity of tax and financial regulation while there has not been much development in the Legal entity transparency category.

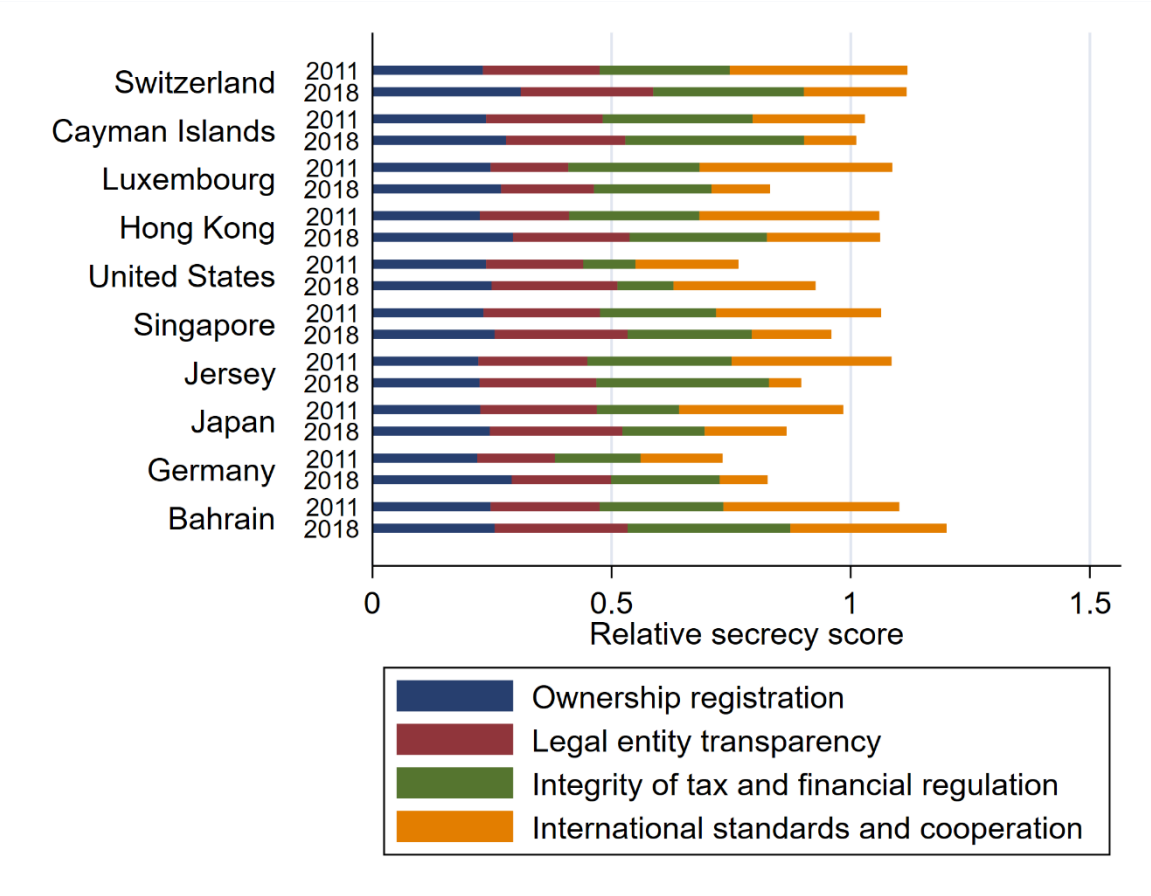
The development of financial secrecy across individual secrecy jurisdictions is perhaps best observed by focusing on a subset of the most important secrecy jurisdictions. Figure 3 summarizes the development of SSs for the top ten countries according to the FSI 2011 ranking. We observe that some of these jurisdictions – most notably Switzerland, the Cayman Islands, and Hong Kong – have remained at high secrecy levels relative to other countries, while others – such as Luxembourg, Singapore, Jersey, and Japan – improved substantially, and still others – including the United States, Germany, and Bahrain – have become relatively more secretive. All countries except the United States have improved in the International standards and cooperation category, and most have become relatively more secretive in the categories Ownership registration and Legal entity transparency. Figure A4 shows the same metric as Figure 3 but does so for countries which appeared in the FSI 2018 top ten. Most notably, the United Arab Emirates and Guernsey have entered the top ten list, in part due to an increase in their relative SSs. Bahrain, despite an increase in its relative SS, fell to 17th place due to a decrease in its GSW. GSW is a metric we now turn to in order to analyze the effects that developments in secrecy levels have had on the importance of jurisdictions in the global provision of secrecy, as indicated by their FSI values.

Figure 2: SSs by country in 2018 and 2011, relative to sample mean



Source: Authors.

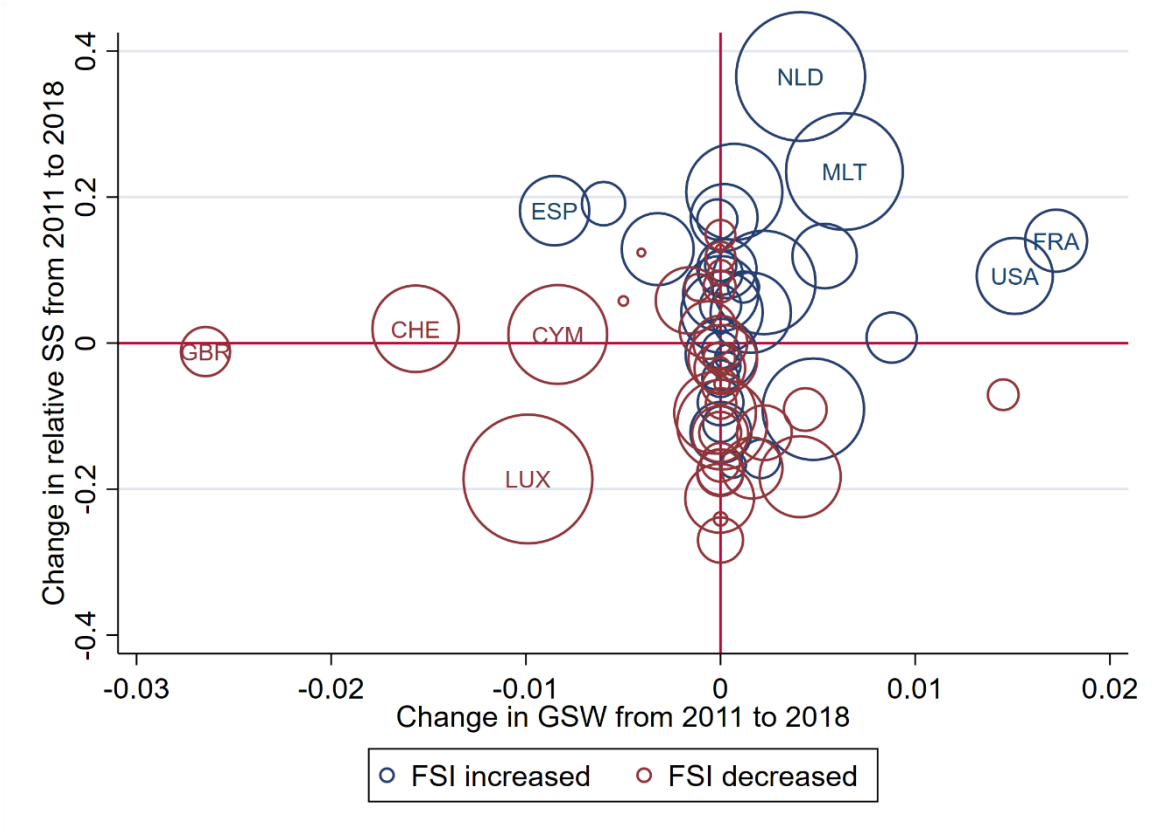
Figure 3: Change in SSs between 2018 (unadjusted) and 2011, top ten FSI 2011 countries



Source: Authors.

Adding changes in GSW and FSI to the previously studied changes in SSs provides us with new insight into the economic geography of financial secrecy. Figure 4 shows the relationship between changes in SSs and GSWs from 2011 to 2018, with the extent and direction of changes to FSI values represented by the size and colour of each circle. The figure reveals a number of important observations. For example, Lebanon increased its FSI despite lowering its SS – this is due to a sharp increase in financial service exports which led to a thirteen-fold increase in Lebanon’s GSW. Malta, the Netherlands, the United Arab Emirates, and Guernsey have achieved dramatic FSI growth by increasing both their GSW and their SS values. On the other side of the spectrum, it seems that Luxembourg has been losing its attractiveness as a secrecy jurisdiction – both its SS and its GSW values have decreased significantly. The same may be said of the Cayman Islands, Bermuda, and Switzerland. The substantial decrease in Jersey’s FSI value, on the other hand, is fully attributable to its reduction of secrecy which, as documented in Figure A3, has taken place in all four secrecy categories. Singapore has boosted its share in the global market for cross-border financial services by 46% between 2011 and 2018 while also reducing its SS markedly, especially in the third and fourth category.

Figure 4: Change in SS, GSW and FSI between 2011 and 2018



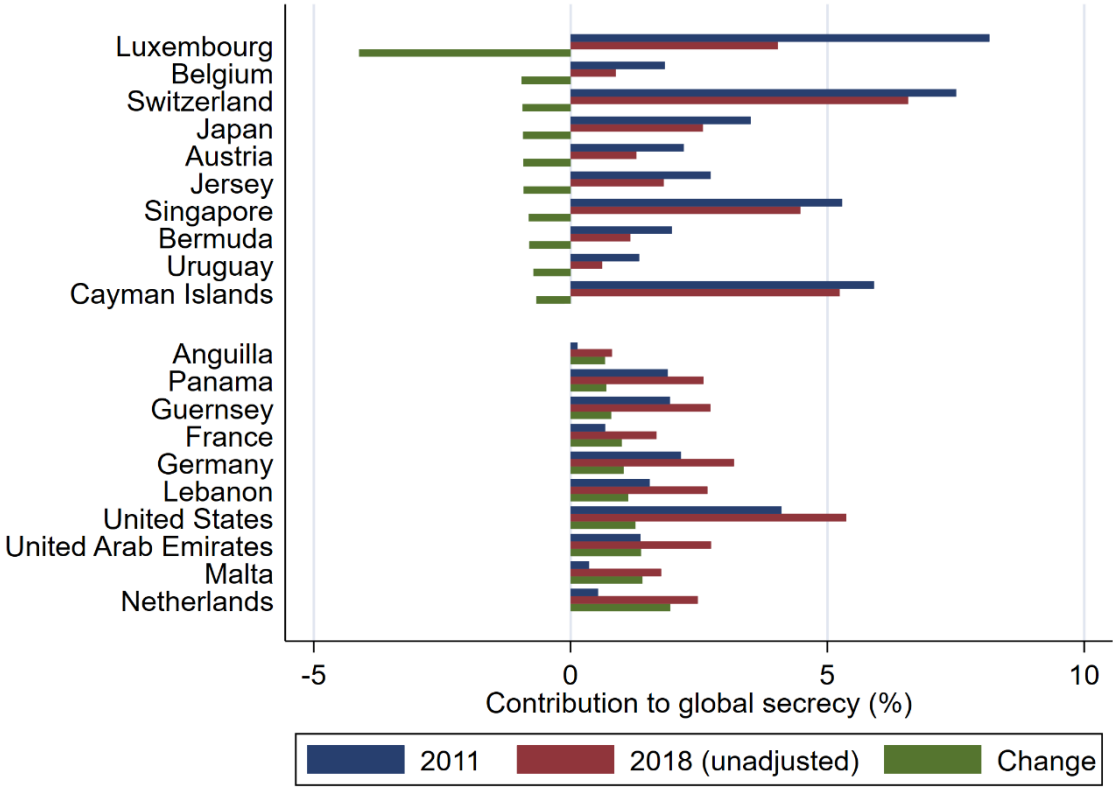
Source: Authors.

Notes: Bubble size represents change (either positive or negative, indicated by the colour of the bubble) in FSI value. Changes in relative SSs and GSWs between 2011 to 2018 are depicted on the two axes as differences between their values, where an increase from 2011 to 2018 implies a positive value on the axis. Country codes: GBR – United Kingdom; CHE – Switzerland; LUX – Luxembourg; CYM – Cayman Islands; ESP – Spain; NLD – Netherlands; MLT – Malta; USA – United States of America; FRA – France.

We confirm the existence of differences across secrecy jurisdictions by establishing that the contribution of some secrecy jurisdictions to global financial secrecy has decreased while the opposite is true of others. The FSI has been designed to measure the contribution of each jurisdiction to the global problem of financial secrecy by combining SS and GSW (Tax Justice Network, 2018). The resulting FSI value is a dimensionless quantitative measure of the harmfulness of the secrecy supplied by each jurisdiction. To improve comparability over time, taking into account changes in methodology, we, again, employ relative measures – in this case the share of each jurisdiction’s FSI value of the global total of all FSI values for a given year. Figure 5 summarizes this contribution to global secrecy in 2011 and in 2018 for the ten countries with largest decreases and the ten countries with largest increases in their respective contributions. In accordance with the findings shown in Figure 4, we find that while the relative importance of some of the key secrecy jurisdictions has significantly decreased, others have caught up. Panama, Guernsey, and the United Arab Emirates have contributed more in 2018 to the global provision of secrecy than Bermuda or Jersey while the United States have surpassed

Luxembourg, Singapore and even the Cayman Islands, albeit by a small margin and largely due to an increase in the GSW.

Figure 5: Largest changes in contribution to global financial secrecy



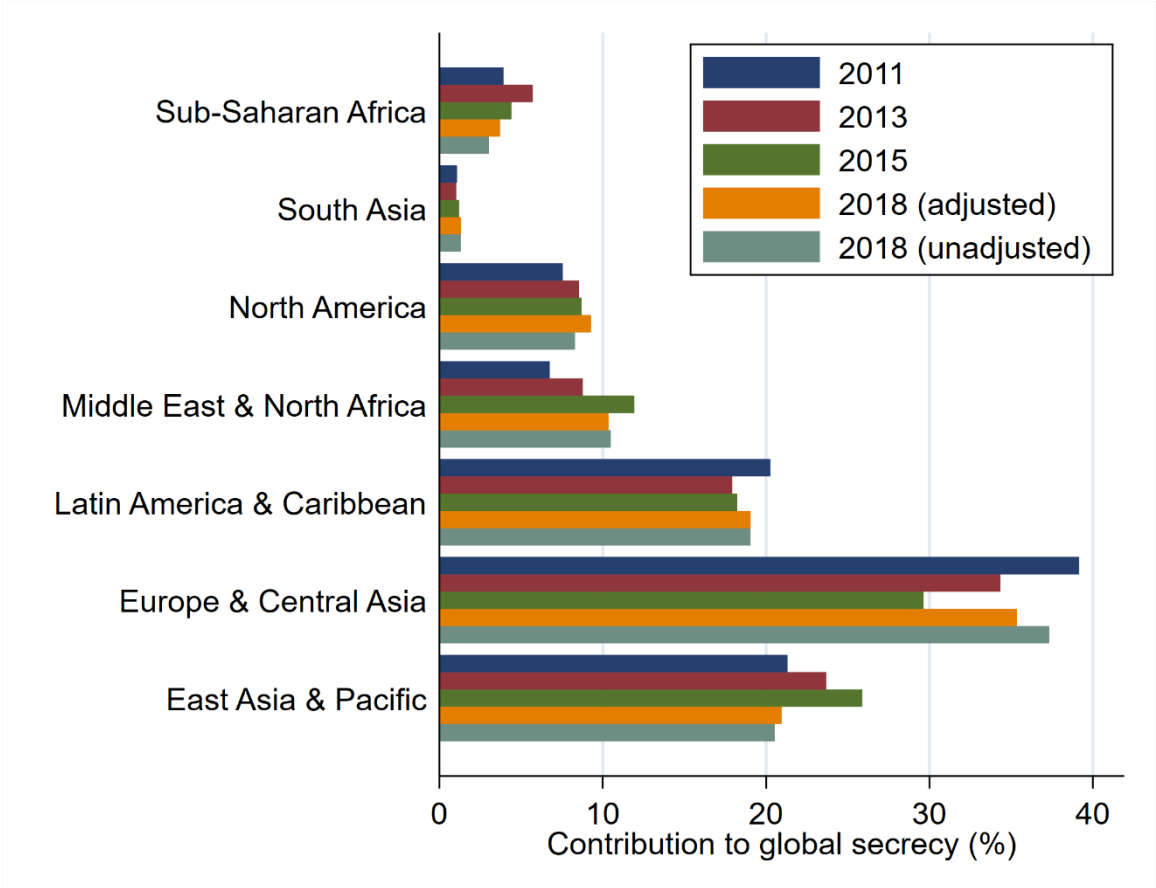
Source: Authors.

Notes: Contribution to global secrecy in 2011 and in 2018 and the change between these years for the ten countries with largest decreases and the ten countries with largest increases in their respective contributions.

Contributions to global financial secrecy may also be studied by geographical region. To the objective, we simply sum up the contribution of countries that form a group, such as those located in specific regions, and compare their development over time. In Figure 6 we divide the 71 countries in our sample into regional groups defined by the World Bank and show the development of their contributions to global financial secrecy over time. This analysis provides us with a number of observations. First, following a gradual increase of the contribution of East Asia & Pacific, the 2018 FSI points to a decreasing relative importance of Hong Kong, Singapore, and the Marshall Islands in particular. Second, we document a move in the opposite direction for Europe & Central Asia, which, after a gradual decrease between 2011 and 2015, exhibits an increase in 2018. This is largely due to the increased contribution of the Netherlands, Guernsey, Ireland and Cyprus, which outweighs the decreasing contribution of Switzerland. The low 2015 value is also caused in part by Luxembourg, which contributed 8.1% in 2011, 6.2% in 2013, a mere 3.3% in 2015 (due to a lower SS of only 48.7), and 4% in 2018. The contributions of Latin America & Caribbean, Middle East & North Africa, and North America

have all increased over time. Figure A5 shows a similar graph for income groups and reveals that approximately 80% of global secrecy is supplied by high income countries, and that the development of this number over time corresponds to country-level observations detailed above.

Figure 6: Development of contribution to global financial secrecy by region, 2011–2018



Source: Authors.

In view of the results presented above, we are now able to revisit and assess the research hypotheses outlined in the introduction. While we find our results to be consistent with the first three hypotheses, we have found no supporting evidence for the fourth, as summarised in Table 4, which includes an overview of testable predictions and an indication of test outcomes achieved on the basis of results presented in this section thus far. The financial transparency hypothesis holds true, with financial secrecy decreasing and financial transparency thereby increasing between 2011 and 2018. The top 20 most secretive secrecy jurisdictions in 2011, with the exception of Vanuatu, Brunei, and the Bahamas, have seen decreases in their SS values (Figure 2). The convergence hypothesis may also be confirmed as well, with convergence observed across countries between 2011 and 2018. Many of the most secretive countries have become less secretive, while some of the less secretive countries have become more secretive, e.g. the Seychelles are now only slightly more secretive than the Netherlands (Figure 2). The international cooperation hypothesis is likewise valid, as most of the observed financial secrecy decline is the result of international standards and cooperation, one of the four categories of

financial secrecy recognized by the FSI (Figures 1 and 3). The results of the fourth hypothesis are, however, less straightforward.

We have found no supporting evidence for the geographical shift hypothesis. In the case of Asia, our results are not consistent with our predictions, namely that the FSI of specific secrecy jurisdictions within the region, e.g. Hong Kong and Singapore, should increase. Specifically, we observe a decrease in the case of Singapore and no significant changes for Hong Kong (Figure 5) with respect to their global financial secrecy contribution. Furthermore, we find no consistent increase in the East Asia and Pacific region (Figure 6). Nevertheless, we are not capable of rejecting the hypothesis completely, as we do not have all of the necessary supporting information. For example, the current data set does not facilitate the identification of secrecy jurisdictions which are key specifically for Asian countries rather than for the whole world (Janský et al., 2018). More generally, we find that changes in contributions to global financial secrecy over time are not governed by a given country's location within a geographical region (Figure 6), thus implying that it is important to study such changes at the country level. At that level we find that e.g. the United Arab Emirates, the Netherlands and Malta have become substantially more important financial secrecy providers between 2011 and 2018, although they are still less important than the currently leading Switzerland, United States and the Cayman Islands.

Table 4. Hypotheses, predictions and results

	Hypothesis	Predictions	Results
1	Financial transparency	Decrease in overall FSI value, decreases in average SS values, in particular in the case of the most secretive jurisdictions	Supporting evidence
2	Convergence	Convergence of SS values across countries over time	Supporting evidence
3	International cooperation	Decreases in SS values, in particular in international standards and cooperation	Supporting evidence
4	Geographical shift	Increases in GSW or FSI of secrecy jurisdictions in specific regions including e.g. Hong Kong and Singapore in the case of South East Asia	No supporting evidence

Source: Authors.

5 Conclusion

Financial secrecy continues to play a major role in the global economy. In this paper we build on the most comprehensive existing effort designed to systematically map the world of financial secrecy, the Financial Secrecy Index, in order to construct a financial secrecy panel data set for the 2009 – 2018 period. While the FSI might not provide as lively a view of financial secrecy as the Panama Papers and other offshore leaks, it facilitates more than a partial glimpse beyond the veil of secrecy and allows us to systematically map financial secrecy over time, by country, and by category. We explore the data set and for the first time identify the main patterns of financial secrecy development.

We find that the intensity of financial secrecy has decreased on average – and that financial transparency has thus improved – between 2011 and 2018. We identify one of four categories of financial secrecy recognised by the FSI, International standards and cooperation, as the main driver of this improvement, with the spread of automatic information exchange and bilateral treaties as the primary contributors. By contrast, we observe limited progress in the area of Legal entity transparency and limited and heterogenous progress in the two remaining categories, i.e. Ownership registration and Integrity of tax and financial regulation. Furthermore, while secrecy has developed in heterogeneous ways in individual country, we observe some degree of convergence towards the sample mean over time overall: while many of the most secretive countries have become less secretive, the opposite is true in other cases. For example, the Seychelles are now only slightly more secretive than the Netherlands.

We further find that while the SSs of some of the most important secrecy jurisdictions, including e.g. Luxembourg, the British Virgin Islands, Jersey, or Singapore, have decreased, those of others have remained at similar levels (Switzerland, Cayman Islands, or Hong Kong) or even increased (United Arab Emirates, Guernsey, Malta, the Netherlands, or the United States). We find that most countries that increased (decreased) their SS have simultaneously seen a corresponding increase (decrease) in financial services exports, highlighting the responsiveness of agents seeking the services of secrecy jurisdictions. Using FSI values, we estimate which countries now contribute more and which ones contribute less to the global financial secrecy problem. We find that, unlike in 2011, Panama, Guernsey, and the United Arab Emirates have contributed more in to the global provision of secrecy in 2018 than Bermuda or Jersey. Countries whose contribution to global secrecy decreased most between 2011 and 2018 include Luxembourg, Belgium and Switzerland while those whose contribution increased most include the Netherlands, Malta and the United Arab Emirates. Groups of countries which contribute most have remained the same regardless of whether we view this geographically, with Europe & Central Asia and East Asia & Pacific in the lead, or in terms of income, with high-income countries coming first. However, we do identify individual countries within these groups which are responsible for the somewhat heterogenous development of the contribution of these groups over time.

In this paper we further developed the concept of secrecy jurisdictions, which is well-founded in the field of economic geography. In a recent review of geographies of tax, Aalbers (2018) discusses financial secrecy alongside tax evasion and includes the concept of secrecy

jurisdictions, while Cobham, Janský, & Meinzer (2015) operationalised the using the FSI. We built on their work by using the FSI as well, but we extended it in a few important aspects that represent our main conceptual, methodological, theoretical and empirical contributions. First, we argued that secrecy jurisdictions move along the secrecy spectrum over time. In other words, we assume that the level of financial secrecy provided by individual secrecy jurisdictions is not fixed and is influenced by their conscious choice. Second, we provided a methodological contribution by operationalising this conceptual argument with the creation of a financial secrecy panel data set on the basis of the five existing Financial Secrecy Index editions published between 2009 to 2018. We developed relative measures of secrecy that overcome some of the identified challenges and data limitations and that improve comparability of secrecy jurisdictions over time. Third, we developed four theoretical hypotheses that are testable using the newly created data set. Fourth, our empirical contributions range from evaluating the development of financial secrecy since the global financial crisis to learning about geographical shifts in the provision of financial secrecy. These findings contribute to the ongoing discussions in economic geography (e.g. papers reviewed by Aalbers, 2018, or a more recent contribution by Cloke & Brown, 2019) as well as other fields such as international political economy (e.g. Christensen & Hearson, 2019), which often lack the empirical basis that we provide with this paper.

In addition to these contributions and empirical findings, we consider the newly constructed data set an important contribution to existing scholarship. We encourage other researchers to use the data set and we are making it available as part of an online appendix to this paper. We explain in detail how we overcome the empirical challenges encountered when combining the five editions of the FSI and what caveats must be kept in mind when working with the panel data set. We argue that most issues may be overcome by using relative secrecy measures and a smaller set of countries with data available for the entire 2011–2018 period. A number of challenges remain for future research to solve. One way to address the drawbacks of our methodology – in particular changes in country coverage and the FSI methodology – might be to collect data retrospectively for a wider range of countries using a consistent methodology to directly assess developments in specific areas of secrecy. To improve our understanding of the world at the intersection of financial secrecy and corporate tax avoidance, our approach could be combined with data which has recently become available or is slated for release, including country-by-country reporting data by large multinational enterprises (OECD, 2018) or the Corporate Tax Haven Index by the Tax Justice Network. A promising extension of our methodology could estimate the effects of changes in secrecy on other economic variables such as bank deposits, foreign direct investment, or portfolio investment. While such effects are hypothesised in existing literature, available empirical evidence is currently scarce – a state of affairs similar to our previous understanding of the global progress of financial transparency, which we have now documented comprehensively in this paper.

6 References

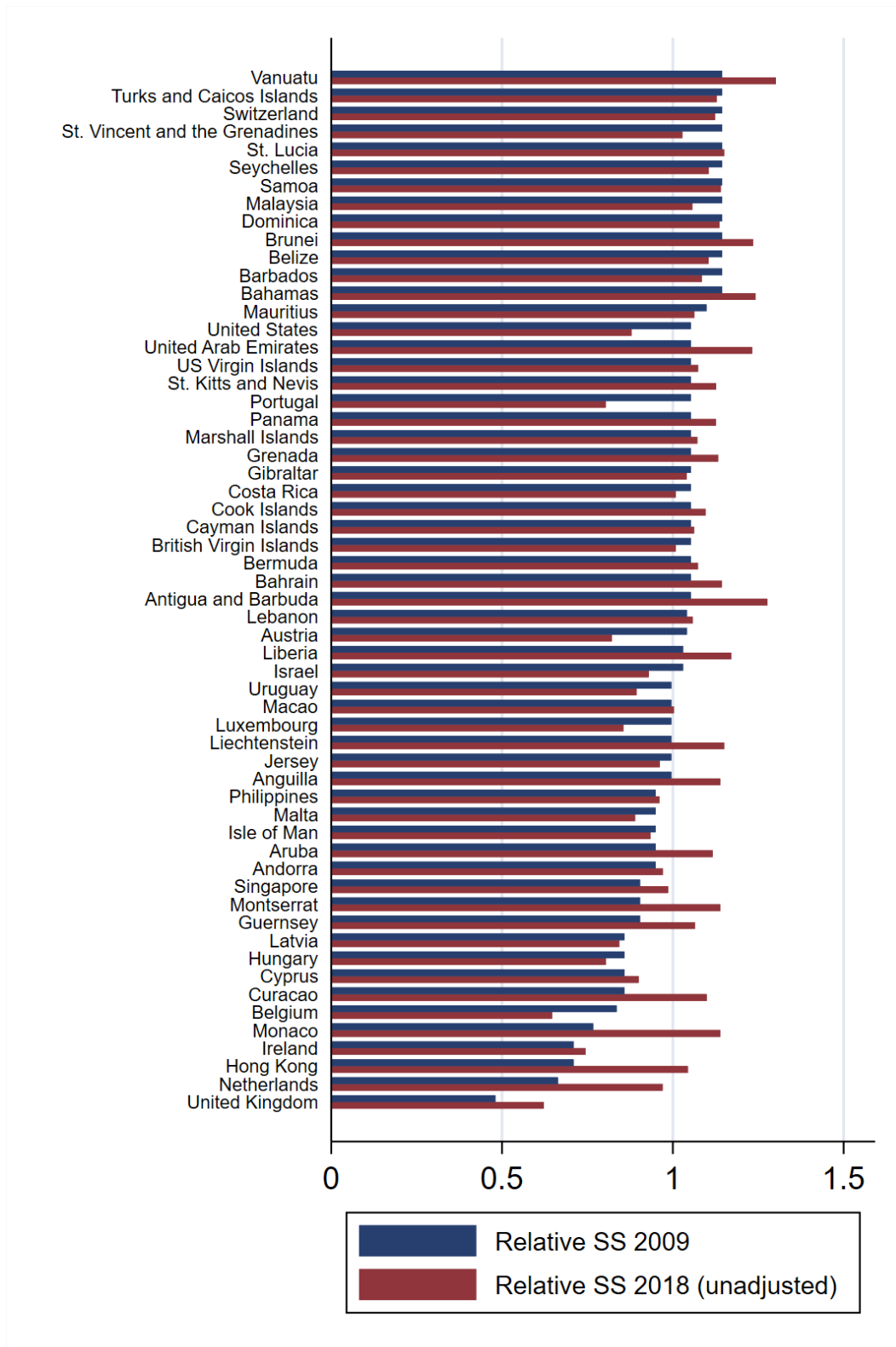
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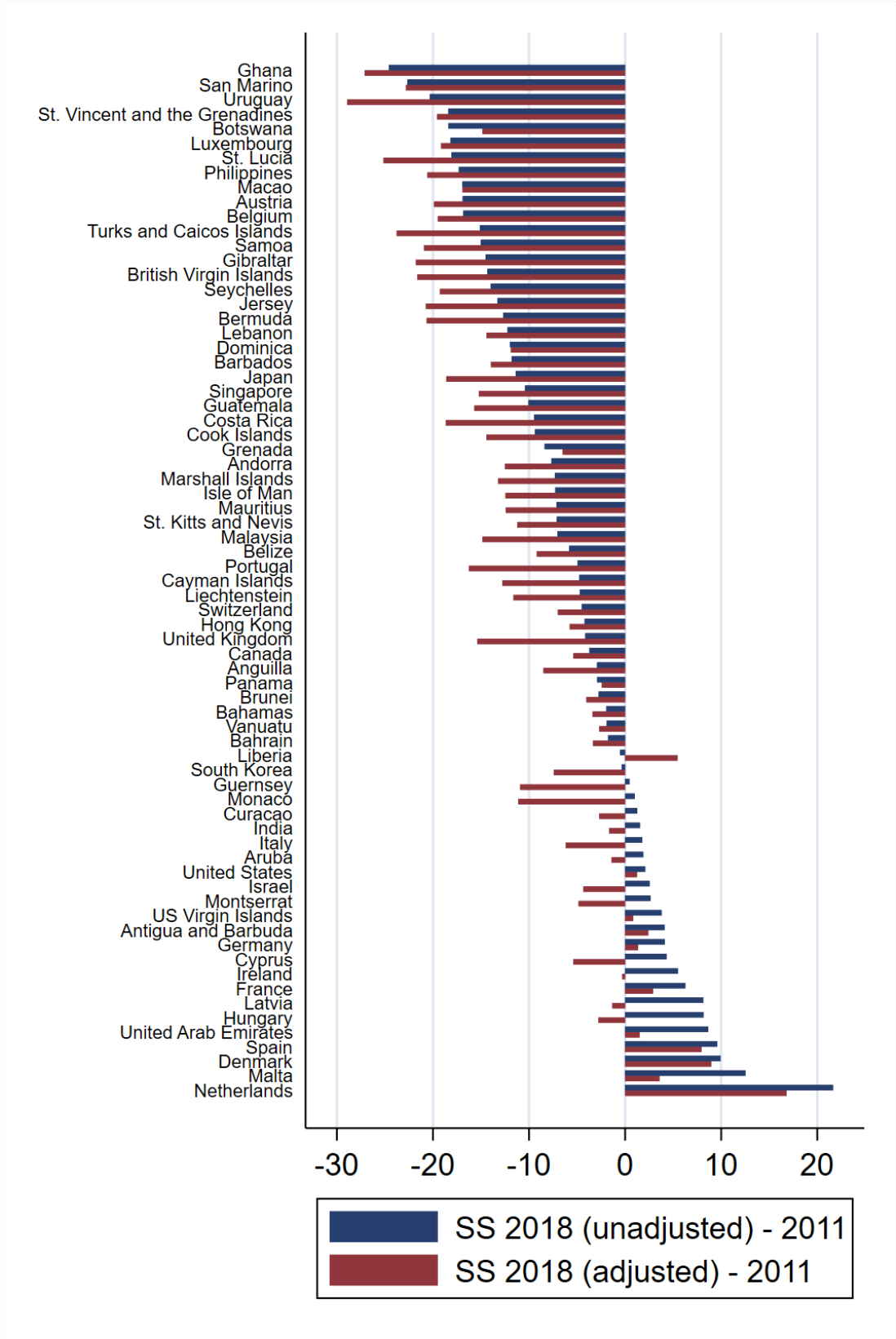
7 Appendix A

Figure A1: SS in 2018 and 2009, relative to sample mean, by country



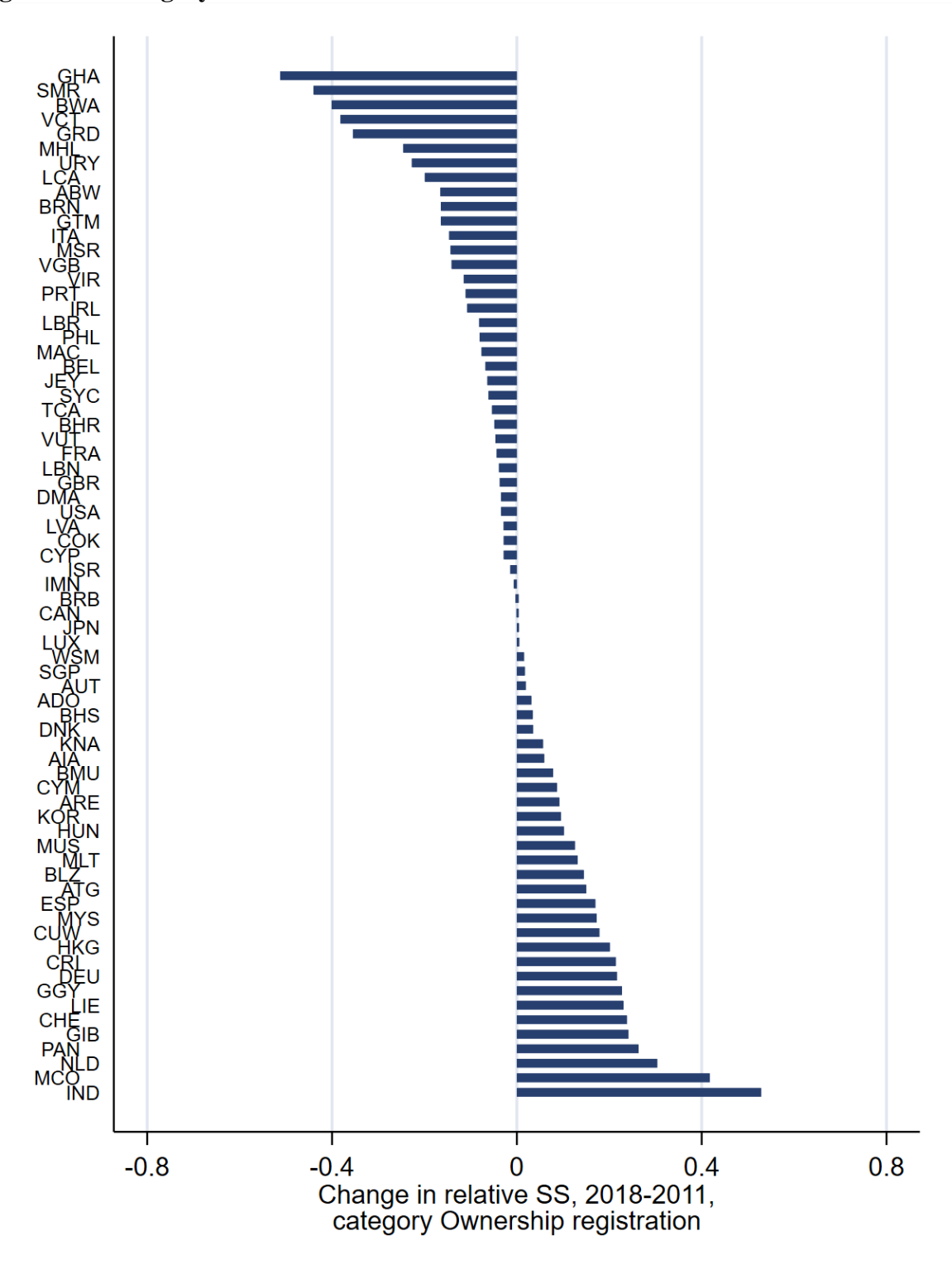
Source: Authors.

Figure A2: Change in SS, 2018 (unadjusted) vs 2011 and 2018 (adjusted) vs 2011, by country



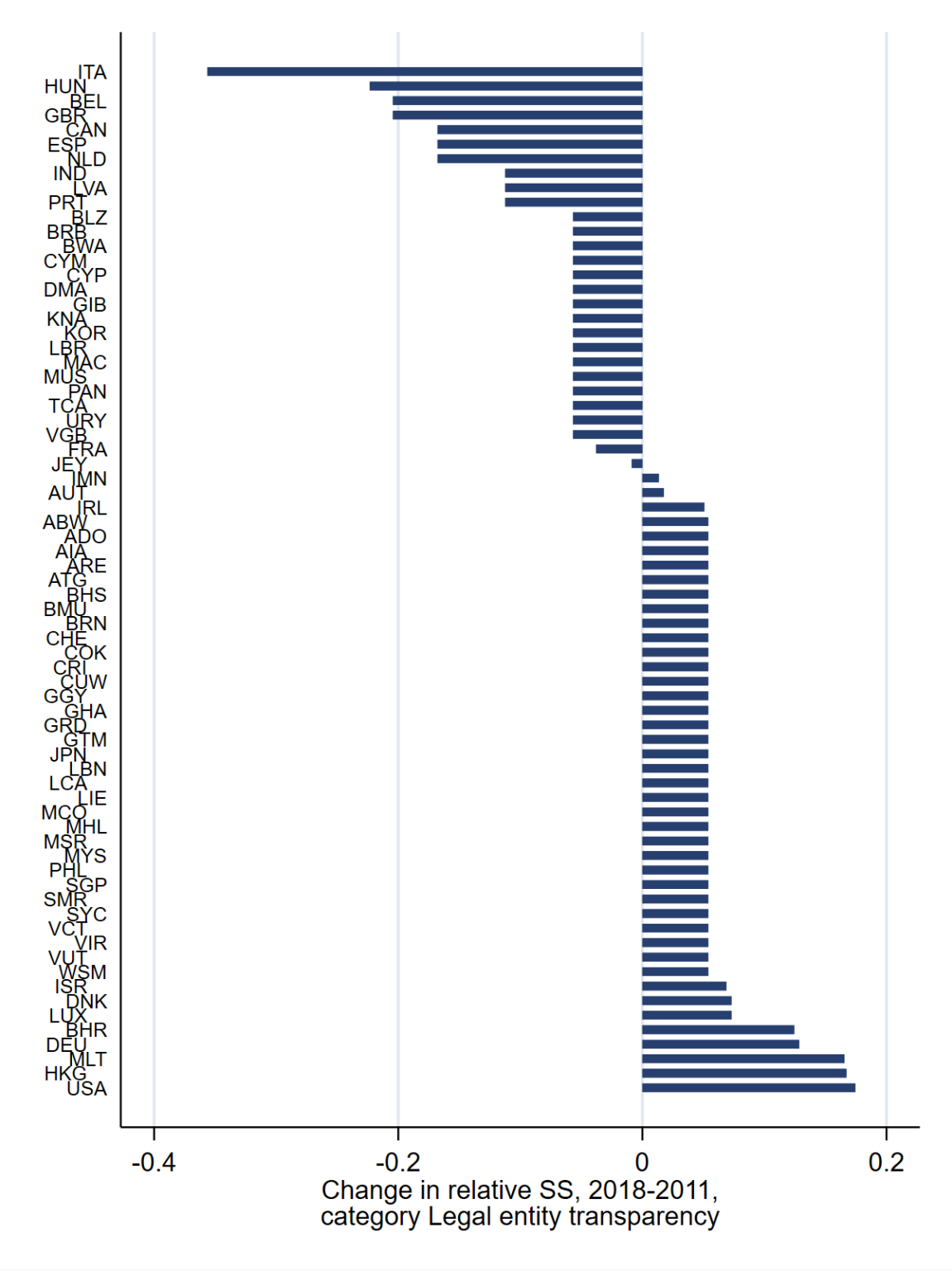
Source: Authors.

Figure A3: Change in relative secrecy scores, 2018 (unadjusted) vs 2011, Ownership registration category



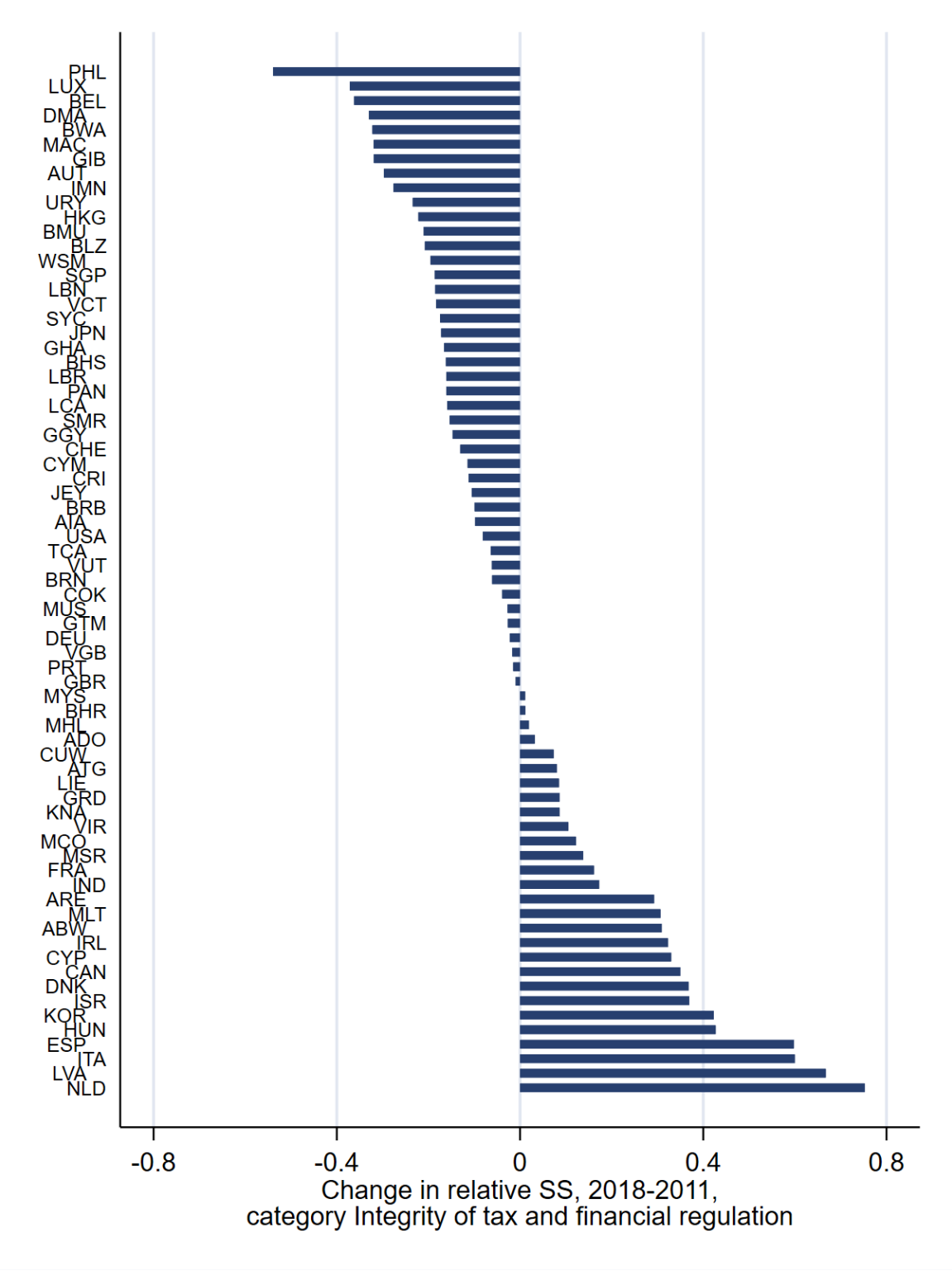
Source: Authors.

Figure A4: Change in relative secrecy scores, 2018 (unadjusted) vs 2011, Legal entity transparency category



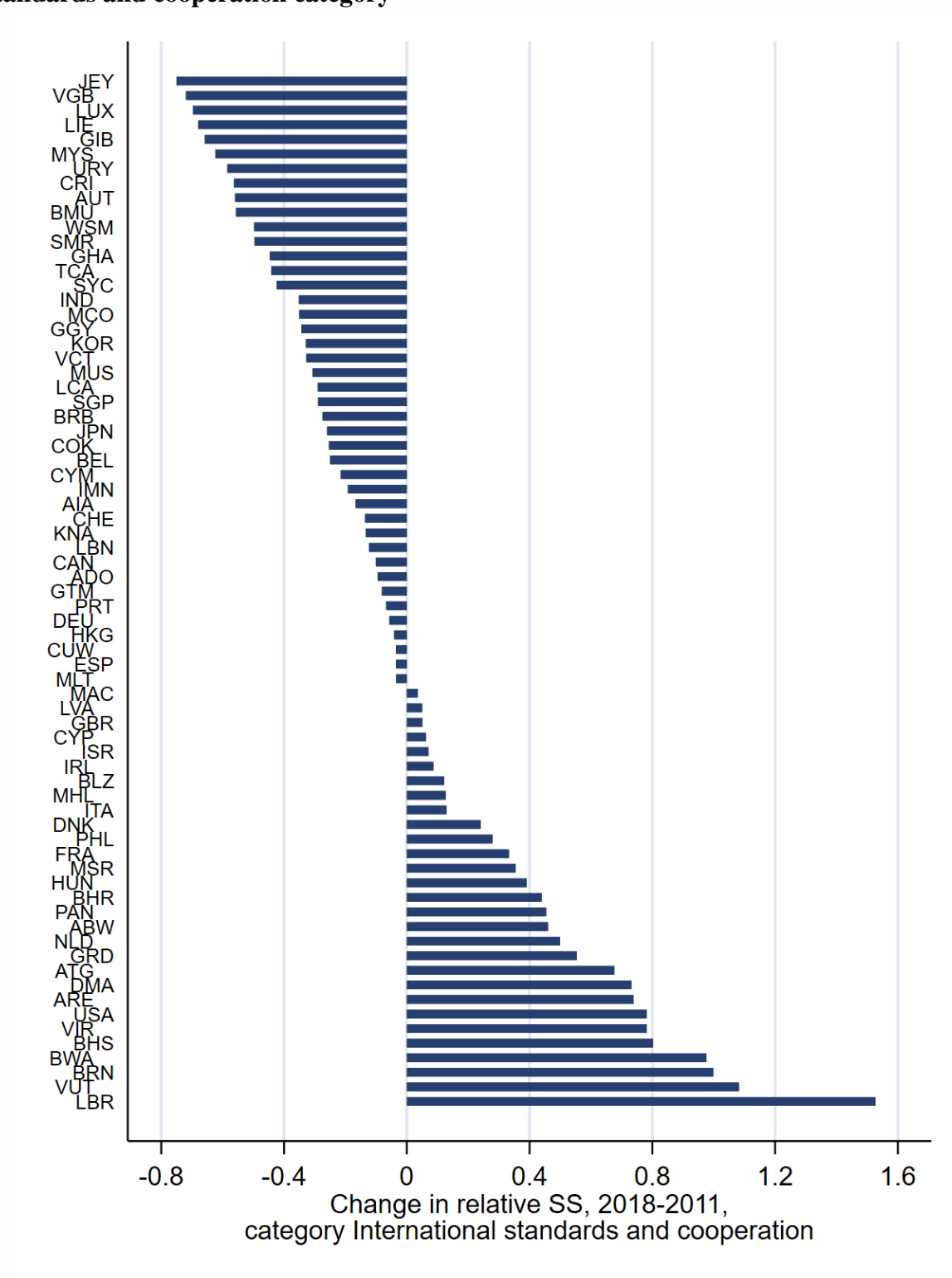
Source: Authors.

Figure A5: Change in relative secrecy scores, 2018 (unadjusted) vs 2011, Integrity of tax and financial regulation category



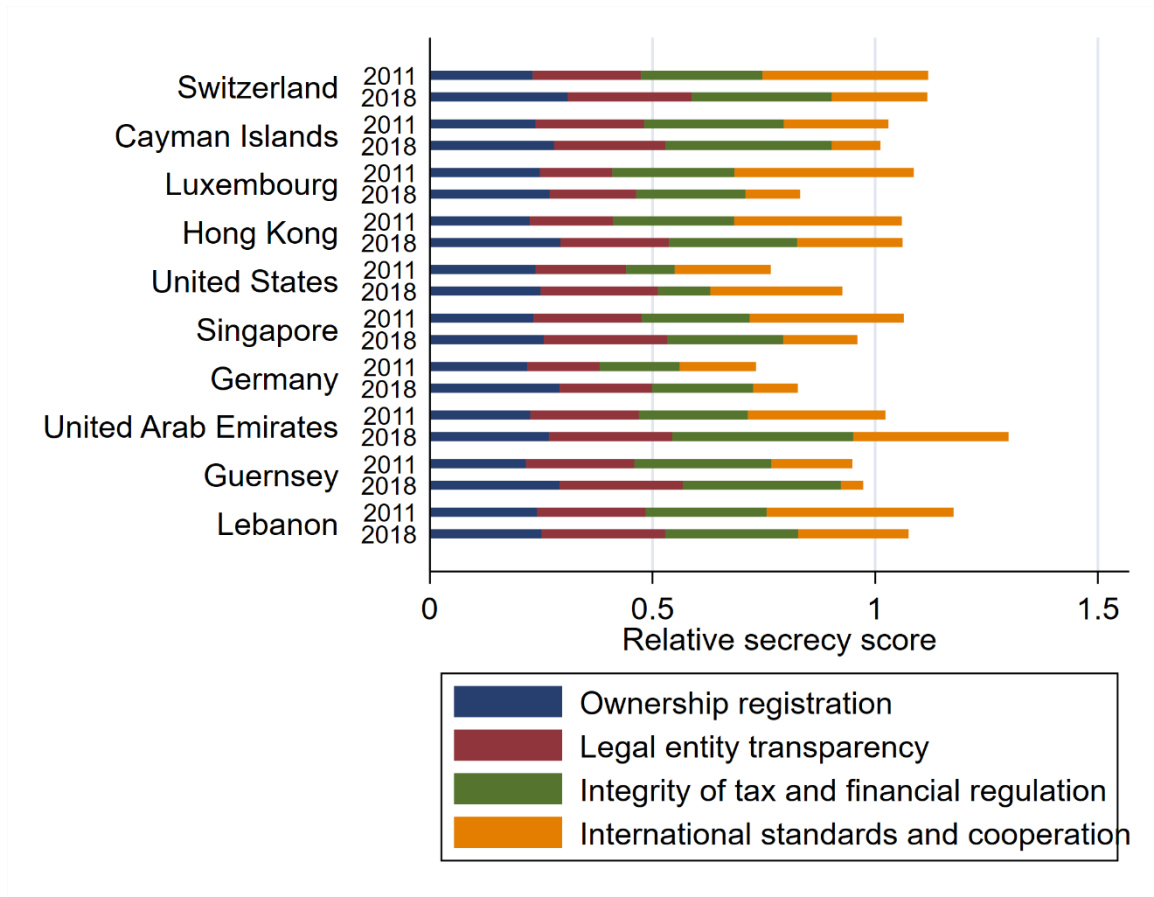
Source: Authors.

Figure A6: Change in relative secrecy scores, 2018 (unadjusted) vs 2011, International standards and cooperation category



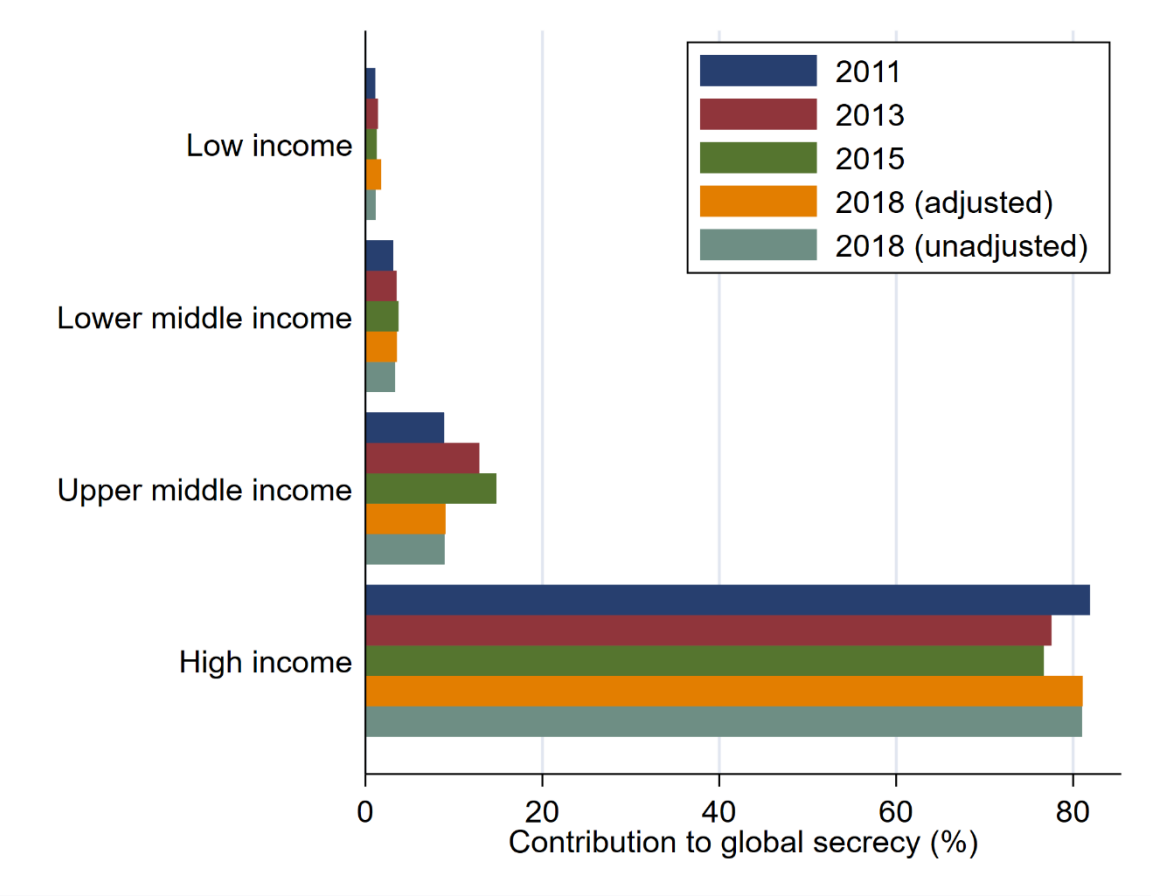
Source: Authors.

Figure A7: Change in SS between 2018 (unadjusted) and 2011, top ten countries of the FSI 2018



Source: Authors.

Figure A8: Development of contribution to global financial secrecy by income, 2011–2018



Source: Authors.

8 Appendix B

In this section we describe in detail the development of each of the 20 indicators which are used to calculate SS. In doing so, we rely on the detailed methodologies published with each FSI edition (Tax Justice Network, 2009, 2011, 2013, 2015, 2018). The KFSIs discussed below are subdivided into four categories – Ownership registration, Legal entity transparency, Integrity of tax and financial regulation, and International standards and cooperation – in accordance with the FSI methodology. In Figure A9 we provide a graphical overview of the development of each indicator.

Prior to introducing each indicator in detail, it is essential to describe our approach to notation. We will refer to the individual indicators using notation of the form ‘KFSI-*year-indicator number*’, where *year* refers to the FSI edition which the indicator comes from, and *indicator number* refers to the number assigned to the indicator within the FSI edition published in *year*. Please note that in some cases, numbers assigned to the same indicator have changed from one FSI edition to the next.

8.1.1 Ownership registration

The first category of indicators, Ownership registration, comprises five KFSIs: Bank secrecy, Trust and foundations register, Recorded company ownership, Other wealth ownership, and Limited partnership transparency. Together, these indicators quantify the extent to which individuals’ wealth can be hidden from authorities.

The first indicator, Bank secrecy (KFSI-2018-1) has been part of the SS from the beginning, although originally in a much simpler form. In the 2009 edition, the indicator was composed of a simple binary question asking whether a jurisdiction has formal, legally enforced banking secrecy. In 2011, the indicator was newly constructed as a combination of six different questions in order to accommodate a more gradual assessment. In 2013, KFSI-2013-1 components remained the same, with the sole exception of one question, specifically rephrased to address new and improved source data. The indicator did not change in 2015, and only small-scale changes were made to two of the six questions in 2018, making it more difficult for jurisdictions to obtain a full transparency score. Overall, we consider KFSI-2018-1 mostly compatible retrospectively with KFSI-2015-1, KFSI-2013-1, and KFSI-2011-1, but significantly less compatible with KFSI-2009-1.

The second indicator, Trust and foundations register (KFSI-2018-2) has changed dramatically between the 2011 and 2013 editions. While KFSI-2009-2 and KFSI-2011-2 were identical, asking a binary question on whether all trusts and foundations formed in a jurisdiction are required to register with a central agency in order to become legally effective, a significantly more complex methodology was introduced in 2013. Additional detail and precision were provided by splitting the indicator in half, i.e. separately for trusts and private foundations, and allowing for a partial score within these halves based on additional details, such as public online data disclosure. KFSI-2015-2 remained identical to KFSI-2013-2, and KFSI-2018-2 introduced only minor changes towards a slightly stricter methodology. We thus consider KFSI-2018-2

compatible with KFSI-2015-2 and KFSI-2013-2, but significantly less so with KFSI-2011-2 and KFSI-2009-2.

The third indicator, Recorded company ownership (KFSI-2018-3) has been part of the SS since 2009, remaining largely the same until 2015, with improvements only made to data sources used to answer the two indicator questions: whether the registration of a company necessitates the disclosure of the owner's identity information, and whether providing updates of this information is mandatory. As the vast majority of jurisdictions had already achieved a zero SS on this indicator by 2011, KFSI-2018-3 introduced significant changes towards a stricter methodology. In particular, full beneficial ownership disclosure is now, along with legal ownership disclosure, among the criteria required for a zero SS on this indicator. We therefore assess the KFSI-2018-3 indicator as only partially compatible with its previous editions.

The last two indicators (KFSI-2018-4 and KFSI-2018-5) were first introduced in the 2018 edition to track how secretive individual jurisdictions are in terms with respect to the ownership of certain types of wealth. Other wealth (KFSI-2018-4) assesses the ownership transparency of real estate and of valuable assets stored in freeports, with a zero SS assigned to jurisdictions which require the reporting of complete beneficial and legal ownership of real estate and either fully transparent freeport ownership or the non-existence thereof.

Limited partnership transparency (KFSI-2018-5) focuses on two aspects of secrecy relevant to limited partnerships. First, it asks whether a jurisdiction requires all limited partnership types to publish beneficial and legal ownership information. Second, it assesses whether all limited partnerships are required to file their annual accounts with a government agency.

8.1.2 Legal entity transparency

The second category of indicators, Legal entity transparency, is composed of five indicators – Public company ownership, Public company accounts, Country-by-country reporting, Corporate tax disclosure, and Legal entity identifier. Prior to the 2018 edition, this category was designated Key aspects of corporate transparency regulation.

The Public company ownership indicator (KFSI-2018-6) assesses whether a jurisdiction requires that all available forms of limited liability companies publish updated beneficial ownership and/or legal ownership information and, for a zero SS, whether a jurisdiction makes such information accessible online for free in an open data format (Tax Justice Network, 2018). This indicator thus constitutes something of an extension to KFSI-2018-3 in the sense that it asks similar questions; however, to obtain a low SS, KFSI-2018-3 only requires that the requisite company ownership information is collected by a relevant government agency whereas KFSI-2018-6 requires this information to be publicly available. Although this indicator has been present in the FSI since 2009, it has been listed under different numbers: originally listed as fifth in 2009, it was renumbered to fourth in 2011–2015. In terms of methodology, the indicator questions gradually became more specific. In 2009, the indicator simply asked a binary question, i.e. whether or not access to beneficial ownership information is possible at a fixed cost below USD 10 and does not require the establishment of complex payment arrangements. In 2011, the methodology newly allowed to score 0.8 on the indicator in case

legal ownership information was published (but not beneficial ownership information). An additional level of detail was introduced in 2015: a score of 0.5 was assigned to jurisdictions providing information on beneficial ownership for a fee smaller than USD 10 rather than for free while a score of 0.9 was assigned to jurisdictions which provided information on legal ownership for a fee rather than for free. While the increased granularity of indicator criteria may have introduced slight external variation over the years – with criteria specified even further in 2018 – we perceive the indicator as being overall relatively compatible over time.

The Public company accounts indicator (KFSI-2018-7) focuses on whether a jurisdiction publishes information from firms' annual accounts online for free. The indicator was included already in 2009 as KFSI-2009-4 in the form of a binary question, and has not undergone any changes other than acquiring a new numerical designation before becoming KFSI-2011-5 and then KFSI-2013-5. For KFSI-2015-5, a new score of 0.5 was awarded to jurisdictions which provided the information for a small fee (less than USD 10) rather than for free. In 2018, a zero SS could only be obtained only by jurisdictions which not only provide the data for free, but which do so using an open data format; any other format, albeit published for free, now produces a score of 0.25. Conditions for obtaining a score of 0.5 or 1 have not changed. Overall, we assess the indicator as well comparable across all FSI editions.

The Country-by-country reporting indicator (KFSI-2018-8), also abbreviated as CbCR, measures whether companies listed on stock exchanges or incorporated in a given jurisdiction are required to publicly publish worldwide financial reporting data on a country-by-country reporting basis. The indicator was first introduced in the 2011 edition as KFSI-2011-6 and awarded a score of 0.5 to jurisdictions which required a limited version of CbCR in accordance with principles elaborated by the Extractive Industries Transparency Initiative. In 2013, the indicator was redefined in greater detail with a score of 0.9 newly assigned to jurisdictions which required an industry-specific CbCR for corporations active in the extractive industries while a score of 0.75 was assigned in case annual CbCR was required at least for corporations active either in banking or in the extractive industries, and a score of 0.5 in case both of these sectors were covered by the requirement. The indicator has not changed between 2013 and 2018. Overall, we assess the indicator as well comparable from 2011 to 2018.

The remaining two indicators in this category, i.e. Corporate tax disclosure (KFSI-2018-9) and Legal entity identifier (KFSI-2018-10) were only introduced in 2018. The Corporate tax disclosure indicator is split into two parts, each of which contributes to one half of the indicator. The first half assesses whether a jurisdiction has gone beyond the legal framework proposed by the OECD and requires a local filing of CbCR in cases when it cannot obtain such information via automatic exchange with other countries. The second half concerns tax rulings and awards a zero SS (for this half of the indicator) in case all cross-border tax rulings are published online for free, with a partial score of 0.25 assigned in case such materials are available only partially or for a fee.

The Legal entity identifier indicator (KFSI-2018-10) reviews the extent to which a jurisdiction requires domestic legal entities to use the Legal entity identifier, a global company identification framework developed under the guidance of the Financial Stability Board. The

indicator facilitates a detailed examination of the current state of framework implementation, assigning one of five possible values (0, 0.25, 0.5, 0.75, and 1).

8.1.3 Integrity of tax and financial regulation

The Integrity of tax and financial regulation category includes six indicators: Tax administration capacity, Consistent personal income tax, Avoids promoting tax evasion, Tax court secrecy, Harmful structures, and Public statistics. From 2011 to 2015, the category was labelled Efficiency of tax and financial regulation and included four indicators which remained similar in these three editions. In 2018, however, one of these indicators was dropped entirely (KFSI-2015-7), two were adjusted (newly designated KFSI-2018-11 and KFSI-2018-15), one remained the same (KFSI-2018-13), and three new ones were added (KFSI-2018-12, KFSI-2018-14, and KFSI-2018-16).

The Tax administration capacity indicator (KFSI-2018-11) assesses the capacity of a jurisdiction's tax administration to collect and process data for investigating and ultimately taxing wealthy people and companies likely to have the means, motivation and opportunities to escape their tax obligations. The indicator has five components, each of which focuses on a specific anti-tax avoidance feature of the tax system. First introduced in the 2011 edition as Efficiency of tax administration (KFSI-2011-8), the indicator was initially designed to establish whether the tax authority of a jurisdiction makes use of taxpayer identifiers for financial institutions and companies and whether it has a dedicated large taxpayer unit within the tax administration. No changes to the indicator were made until the 2018, when stricter rules were introduced: a zero-SS now requires having a high net worth individual unit in addition to a large taxpayer unit, using taxpayer identification numbers for both natural persons and legal entities, and obliging taxpayers to report on tax avoidance schemes and uncertain tax positions.

The Consistent personal income tax indicator (KFSI-2018-12) was only introduced in 2018. It assesses a jurisdiction's personal income tax regime, with a zero SS assigned to regimes which use a single uniform personal income tax which taxes worldwide income and with an increasing SS for less transparent regimes.

The thirteenth FSI indicator is designated as Avoids promoting tax evasion. It was introduced in 2011 as the ninth indicator and has not changed since, i.e. KFSI-2018-13 corresponds to KFSI-2011-9, KFSI-2013-9, and KFSI-2015-9. It assesses whether a jurisdiction includes worldwide capital income in its income tax base and whether it grants unilateral tax credits for foreign tax paid on certain foreign capital income.

The Tax court secrecy indicator (KFSI-2018-14) was only introduced in 2018. It evaluates the openness of a jurisdiction's judicial system in tax matters by analyzing two relevant aspects: (i) openness of court proceedings, lawsuits, and trials, and (ii) public online availability of verdicts, judgements, and sentences. In both areas, indicator methodology allows for a degree of granularity based on the extent to which this information is available to the public.

While the Harmful structures indicator (KFSI-2018-15) has been included in the FSI since 2009, new features have been added over time. Initially, KFSI-2009-12 consisted of a binary question asking whether a jurisdiction allows the existence of protective cell companies (PCCs),

i.e. corporate entities which contain a number of cells which behave as companies in their own right – which in fact they are not. Subsequently, to accommodate the development of the Harmful legal devices indicator (KFSI-2011-10), the indicator was split in half to account in similar fashion also for trusts with flee clauses. In 2015, limited liability companies (LLCs) were added along with protected cell companies, and in 2018, the indicator was split further into four parts: large bank notes, bearer shares, series LLCs/PCCs, and trust with flee clauses. The availability of each of these tools in a jurisdiction results in a 0.25 increase in SS for this indicator. Overall, we assess the indicator as relatively comparable, with precision and detail increasing over time.

Public statistics (KFSI-2018-16), the last indicator in the Integrity of tax and financial regulation category, was only introduced in 2018. It is split into ten equally weighed subcomponents, each of which asks whether a jurisdiction makes publicly available one of the selected statistical data sets related to its international financial, trade, investment and tax positions.

8.1.4 International standards and cooperation

International standards and cooperation, the fourth and last indicator category, comprises four indicators: Anti-money laundering, Automatic information exchange, Bilateral treaties, and International legal cooperation.

The Anti-money laundering indicator (KFSI-2018-17) has been present in the SS since 2009 and focuses on compliance with anti-money laundering recommendations issued by the Financial Action Task Force (FATF). Initially, KFSI-2009-3 was defined as a binary indicator equal to 0 in case at least 90% of the 49 FATF recommendations of a jurisdiction's anti-money laundering regime were rated either as "compliant" or as "largely compliant" and no recommendation were rated as "non-compliant"; a value of 1 was assigned otherwise. In 2011, the indicator (KFSI-2011-11) was transformed into a continuous measure of compliance with these recommendations. The indicator has since changed only slightly to include an updated list of recommendations taken into consideration in accordance with changes in FATF methodology. An important caveat related to this indicator is that its comparability over time is implicitly limited due to the long intervals in which compliance with the listed recommendations is actually assessed by the FATF (whose reports constitute the data source for this indicator). In a majority of cases, no new assessments of the actual state of compliance with the recommendations were carried out between consecutive versions of the SS. Therefore, while we assess the indicator as relatively comparable over time, in practice, there is not much development in the value of this indicator over time.

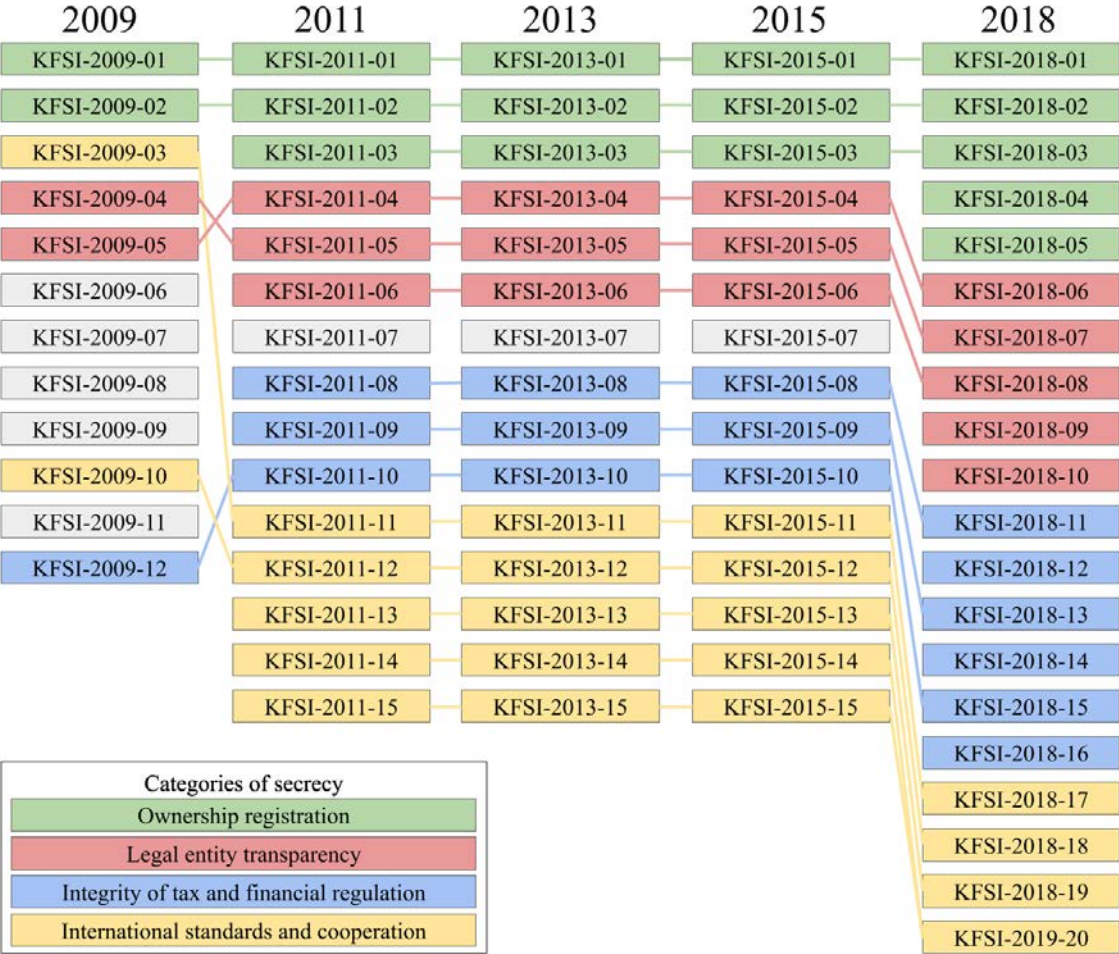
The Automatic exchange of information indicator (KFSI-2018-18) takes into account the extent to which a jurisdiction is committed to automatically exchanging information with other countries' tax authorities. Introduced in 2009, the indicator has undergone major changes over time as the standards of cooperation regarding automatic information exchange (AIE) improved. The initial indicator (KFSI-2009-10) asked whether a jurisdiction's authorities have effective access to bank information for the purposes of information exchange for both criminal and civil tax matters. In 2011, this question was moved to the Bank secrecy indicator and KFSI-

2011-12 newly assessed whether a jurisdiction participates in multilateral automatic information exchange on tax matters. In 2011 and 2013, the assessment was carried out using the European Savings Tax Directive as a proxy for this indicator, as no global mechanism implementing AIE was in existence at this point. In 2015, the indicator changed to reflect the gradual implementation of the OECD's Common Reporting Standard. KFSI-2015-12 thus newly asked whether a jurisdiction had signed the Multilateral Competent Authority Agreement (MCAA) which provides the legal framework to engage in AIE. Some granularity was introduced by also assessing a less formal commitment to begin exchanging information, while the proposed AIE launch year was also taken into account. The 2018 edition further improved the methodology and now uses detailed data on which countries engage in AIE and under what conditions, as published by the OECD. Overall, we find that changes to the definition of this indicator made over time have appropriately reacted to the development of AIE standards, and we thus assess the indicator as relatively well comparable across all FSI editions.

The Bilateral treaties indicator (KFSI-2018-19) examines the extent to which a jurisdiction participates in effective information exchange relationships. The indicator is defined as $\max\{0; 1 - (\text{number of active treaties} / 98)\}$. The denominator in the fraction, 98, represents the number of countries that have adhered to the multilateral Amended Council of Europe/OECD Convention on Mutual Administrative Assistance in Tax Matters. Therefore, the more relationships a country has activated, the lower its SS for this indicator, with a zero SS assigned to countries which have activated at least 98 relationships. While the indicator has been part of the SS since 2009, KFSI-2009-9 was initially a binary variable indicating whether a jurisdiction has activated at least 60 bilateral treaties with broad tax information exchange clauses for both civil and criminal tax matters. Following an innovation made in 2011, the newly numbered KFSI-2011-13 was redesigned to take the average number of information exchange relationships of G20 countries as the baseline number of treaties used in the denominator and evaluated other jurisdictions relative to this number. Therefore, KFSI-2011-13 was defined similarly to KFSI-2018-19, but using 60 in the denominator. The baseline number of treaties (i.e. the average of the number of relationships of G20 countries) was then recalculated for KFSI-2013-13 to 46 (where the drop was caused by a stricter evaluation of treaties that qualify as active) and again for KFSI-2015-13 (53 relationships).

The final International legal cooperation indicator (KFSI-2018-20) measures the extent to which a jurisdiction participates in international transparency commitments and engages in international judicial cooperation on money laundering and other criminal matters. This KFSI includes nine sub-indicators, each of which focuses on a specific commitment of a jurisdiction to internationally cooperate in legal matters. Similar questions were first introduced in the SS methodology in 2011, with two indicators formerly in existence: International transparency commitments (KFSI-2011-14) and International judicial cooperation (KFSI-2011-15). These indicators then remained unchanged until 2015. We thus compute an arithmetic average of indicators 14 and 15 from the 2011–2015 editions of the SS and consider the resulting values as largely compatible with KFSI-2018-20.

Figure A9: Development of SS indicators across the five FSI editions



Source: Authors.

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