Introductory note on the ActionAid
Tax Treaty Dataset, October 2015

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This is a consultative document, ahead of planned release of the dataset in early 2016. Comments, in particular on the coding scheme and composition of the indices, would be appreciated to m.hearson@lse.ac.uk

Background

Around 3000 bilateral tax treaties had been concluded by the end of 2014, two-thirds of which had at least one developing country as signatory. Because tax treaties curb developing countries' taxing rights over foreign investment significantly, there is growing debate about the appropriateness of existing treaties and model treaty norms for developing countries. For example, an influential IMF paper in 2014 warned that developing countries "would be well-advised to sign treaties only with considerable caution."[2]

Many developing countries are beginning to re-examine the treaties they have signed in the past. Rwanda and South Africa have successfully renegotiated their agreements with Mauritius, while Argentina and Mongolia have cancelled or renegotiated several agreements. Uganda has announced a review of its policy towards tax treaties,[3] while Zambia has renegotiated several of its historical treaties. Meanwhile, other developing countries continue to negotiate new treaties.

In the face of this negotiation and renegotiation activity, little analysis has been conducted of the content of treaties signed to date. Academic studies, for example, are limited to small sample sizes or to only a subset of the clauses that form part of negotiations.[4] The most comprehensive study to date, by the IBFD, presents aggregate statistics, but does not break them down by country or by region, for example.[5] Negotiators therefore have little information about negotiating baselines, and what exists requires laboriously compiling and trawling through the texts of treaties, a task that can only partially be made easier through the use of expensive proprietary databases. Many developing countries therefore enter into negotiations somewhat 'blind' to past precedent.

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[1] The ActionAid Tax Treaty Dataset has been compiled by Martin Hearson with the help of a team of LLM students at the London School of Economics, and funded by ActionAid International.

[2] IMF, *Spillovers on International Corporate Taxation* (Washington, DC, 2014).

[3] Ismail Musa Ladu, "Govt Suspends Double Taxation Pacts," *Daily Monitor*, June 06, 2014.

[4] For example: Kim Brooks, "Tax Treaty Treatment of Royalty Payments from Low-Income Countries: A Comparison of Canada and Australia's Policies," *eJournal of Tax Research* 5, no. 2 (2007); Veronika Dauer and Richard Krever, *Choosing between the UN and OECD Tax Policy Models: An African Case Study*, EUI Working Papers, 2012; Thomas Rixen and Peter Schwarz, "Bargaining over the Avoidance of Double Taxation: Evidence from German Tax Treaties," *FinanzArchiv: Public Finance Analysis* 65, no. 4 (December 1, 2009): 442–471, doi:10.1628/001522109X486589; Arjan Lejour, *The Foreign Investment Effects of Tax Treaties*, CPB Discussion Paper, 2014.

[5] Wim Wijnen and Jan de Goede, "The UN Model in Practice 1997-2013" (International Bureau of Fiscal Documentation, 2013).

A quantitative dataset of tax treaties will allow researchers and negotiators to address important questions such as:

- How does the content of different countries' treaty networks compare with each other?
- Which countries have been successful at obtaining particular treaty provisions, and with whom?
- How is the content of treaties changing over time?

In the short term, answers to these questions would help developing countries to devise negotiating positions backed up by evidence about the prevalence of clauses that are important to them. In the long term, they will strengthen the quality of research on questions such as which tax treaty clauses may be effective at attracting investment, and under what circumstances developing countries obtain better or worse negotiated outcomes.

The ActionAid Tax Treaties Dataset

Working with a team of London School of Economics LLM students, we have compiled the first comprehensive open dataset of tax treaty content. Some 506 treaties are included, covering developing countries from sub-Saharan Africa and Asia. Each treaty is coded for 26 points of negotiated variation, incorporating for example withholding tax rates, characteristics of the definition of permanent establishment, and the right to tax capital gains. To maximise accuracy, every point in the dataset has been double-coded.

The resulting spreadsheet shows at a glance the detailed negotiated content of each tax treaty, and it can easily be filtered and manipulated to show results for a subset of countries or clauses, and trends over time.

Figure 1: Sample of raw data in the spreadsheet

	A	B	C	F	P	Q	R	S	T
1					5i	5ii	5iii	5iv	5v
2	AgmtID	C1	C2	Signedyear	5(3)(a)	5(3)(a)	5(3)(b)	5(4)(a)	5(4)(b)
3	AgmtID ▼	C1 ▼	C2 ▼	Signedy ▼	Constru ▼	Supervis ▼	Service ▼	Delivery ▼	Delivery ▼
4	254	Kiribati	Australia	1991	3 Yes		3 Yes	Yes	
5	272	Papua New	Australia	1989	3 Yes		3 Yes	Yes	
6	273	Philippines	Australia	1979	6 Yes		6 Yes	Yes	
7	284	Sri Lanka	Australia	1989	6 Yes		6 Yes	Yes	
8	298	Vietnam	Australia	1992	6 Yes	No	Yes	Yes	
9	389	Mongolia	Austria	2003	12 No	No	Yes	Yes	
10	392	Nepal	Austria	2000	6 Yes		6 Yes	Yes	
11	400	Pakistan	Austria	1970	12 No	No	Yes	Yes	
12	402	Pakistan	Austria	2005	6 No	No	No	No	
13	404	Philippines	Austria	1981	6 Yes	No	Yes	Yes	

Based on the dataset, we are experimenting with the preparation of five indices, which show the overall balance of provisions favouring source and residence taxation in a given treaty.

	AgmtID	C1	C2	Signed	UN ind	Source	PE	WHT	Other
2	254	Kiribati	Australia	1991	0.47	0.49	0.52	0.51	0.44
3	272	Papua Ne	Australia	1989	0.44	0.45	0.52	0.50	0.33
4	273	Philippine	Australia	1979	0.47	0.46	0.60	0.55	0.22
5	284	Sri Lanka	Australia	1989	0.58	0.54	0.49	0.45	0.67
6	298	Vietnam	Australia	1992	0.28	0.28	0.19	0.41	0.22
7	389	Mongolia	Austria	2003	0.06	0.10	0.06	0.13	0.11
8	392	Nepal	Austria	2000	0.61	0.49	0.71	0.31	0.44
9	400	Pakistan	Austria	1970	0.18	0.28	0.17	0.56	0.11
10	402	Pakistan	Austria	2005	0.75	0.68	0.64	0.64	0.78
11	404	Philippine	Austria	1981	0.58	0.53	0.53	0.50	0.56
12	458	Vietnam	Austria	2008	0.67	0.60	0.75	0.60	0.44
13	508	Pakistan	Azerbaijar	1996	0.50	0.44	0.94	0.28	0.11

Example findings

Taxation of services

Looking at individual clauses shows that, for example, service taxation provisions are becoming more common, and the inclusion of the UN model service PE provision is now the norm in developing country tax treaties. Clauses providing for withholding taxes (WHTs) on technical service fees are not as common, but are becoming more so.

Figure 3: Percentage of treaties including service taxation provisions in each year
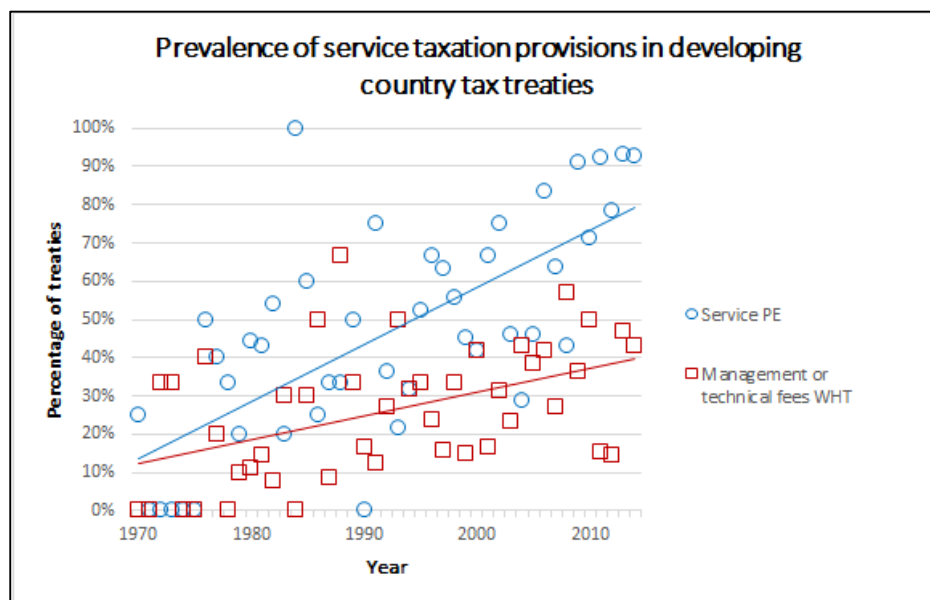
Capital gains provisions

While article 13(4) providing for source taxation of gains from the sale of 'land-rich' companies is becoming more widespread, it is becoming less common to see article 13(5) providing source taxation of gains from the sale of other types of shares included in developing country tax treaties.
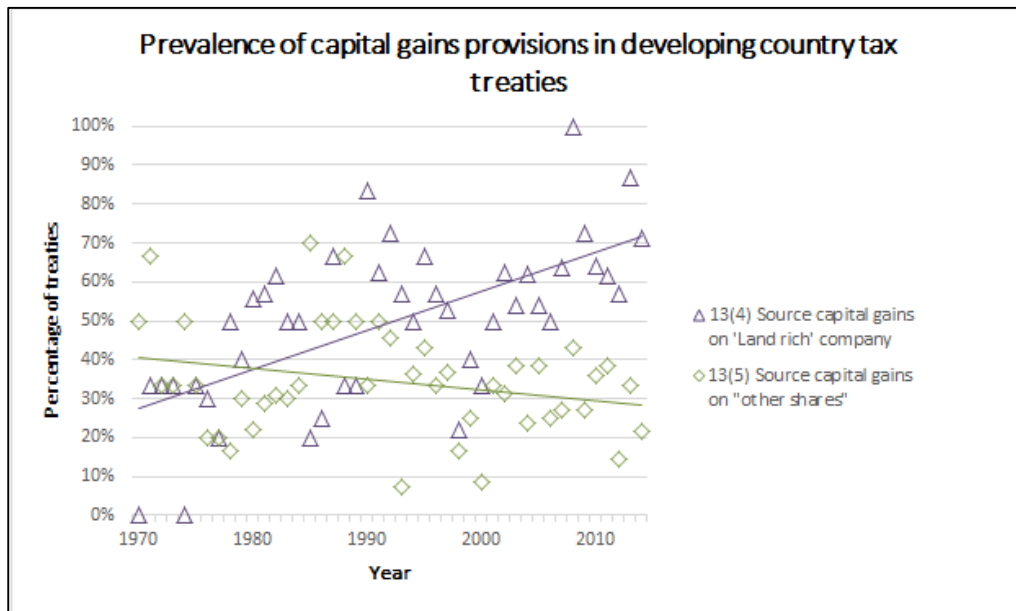
Overall source-residence balance

Using aggregate indexes for PE, WHT and the other remaining provisions based on the dataset, we can see that the permanent establishment definitions within tax treaties have become more expansive (a higher value in the source/residence index) since around 2000. Withholding tax rates have tended to decline over time. A strict analysis measuring the prevalence of UN model treaty provisions as opposed to their OECD equivalents shows a notable growth in their use since around 2000.

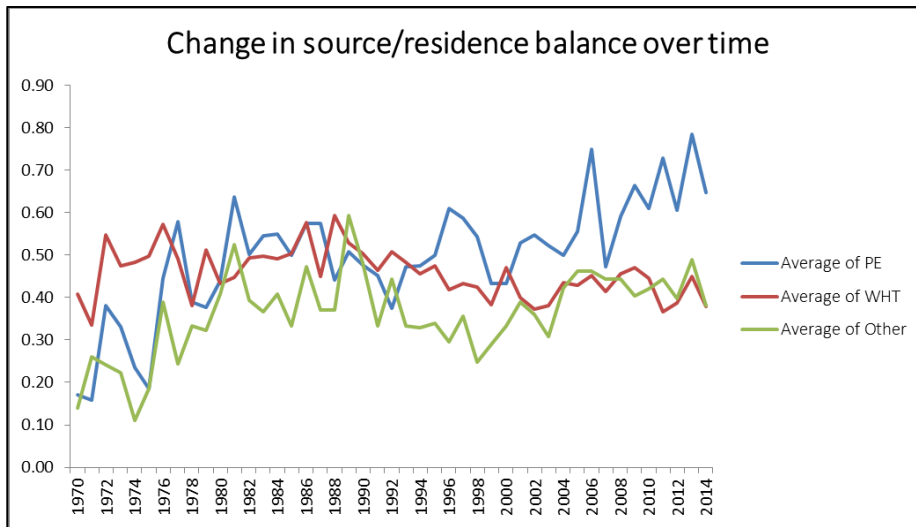**Figure 5: Average values of source/residence indices in each year**

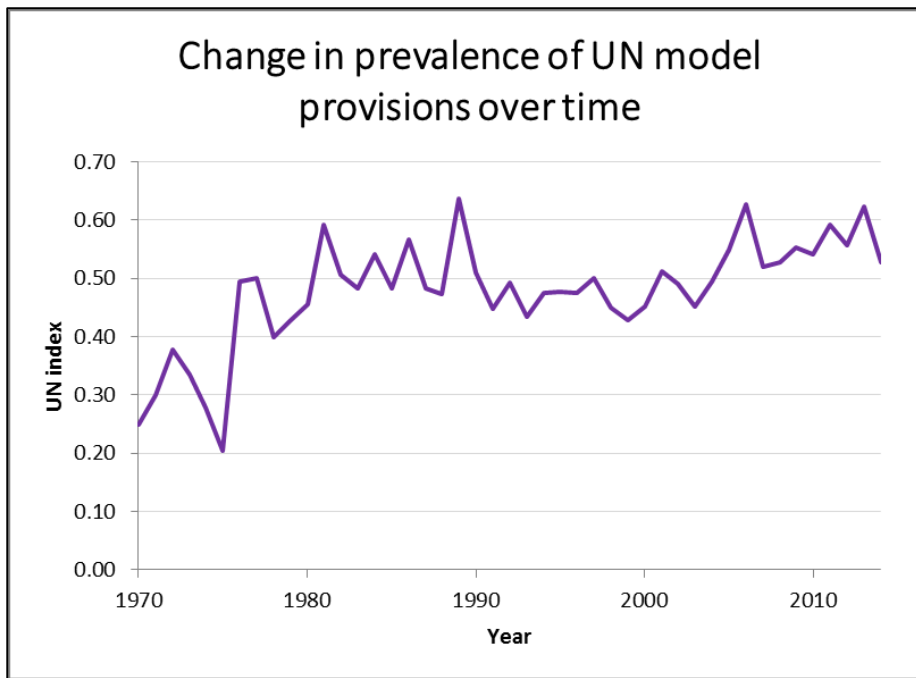Change in source/residence balance over time

Legend:
- Average of PE
- Average of WHT
- Average of Other

Figure 6: Average share of UN model provisions in developing country treaties each year

Change in prevalence of UN model provisions over time

Individual countries in comparative context

The figures below, produced with preliminary data for a presentation given to the Danish parliament's Fiscal Affairs Committee during in 2015, show the source/residence balance of all treaties in the dataset over time, with Danish treaties highlighted. While the overall trend is towards more source-orientated provisions, Denmark shows a different trend: a more generous negotiator during the 1980s, it has since become tougher. This is reflected in the PE definitions contained in Danish treaties with developing countries, which have recently become more residence-based, the opposite of the overall trend.

Figure 7: Source/residence indices for all treaties, Danish treaties highlighted
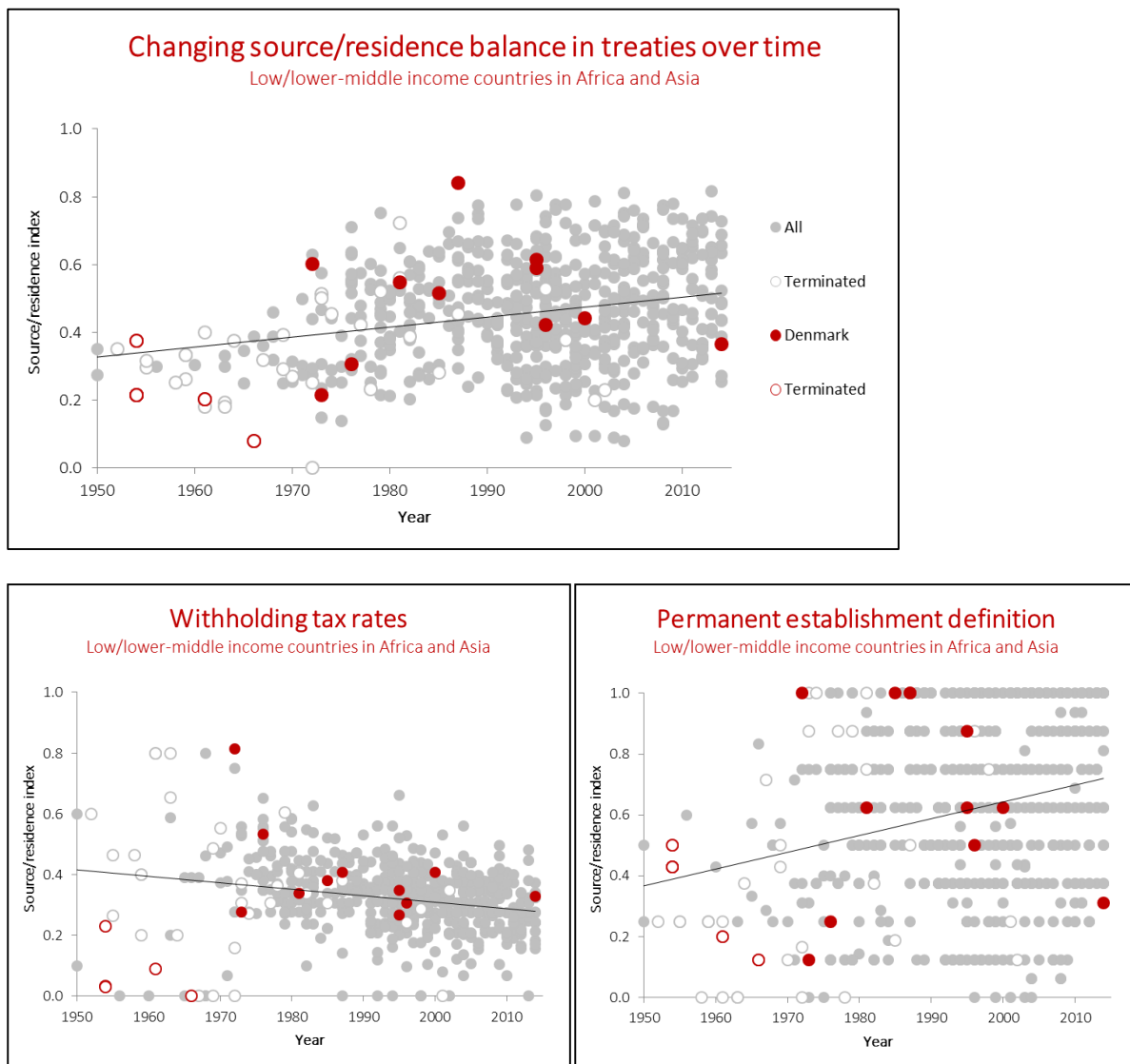
Methodological notes

Treaties included

The dataset includes treaties signed by low and lower-middle income countries in sub-Saharan Africa and Asia, excluding G-20 member states. There are two versions of the finished dataset. One, by treaty, includes each treaty only once and has 506 entries. The other, by country, includes treaties twice where both signatories are in the sample dataset, and has 524 entries.

The dataset starts in 1970 and ends in 2014. This is because pre-1970, the treaties become more and more unconventional in their structure and content, or they are colonial era treaties. The end date is 2014, and the list of treaties was obtained from the IBFD database on 1st January 2015. There are likely to be some omissions from that list in 2014 where the IBFD database had not been immediately updated. Also not included in the dataset are:

- Treaties whose text could not be obtained
- Treaties not available in English
- Treaties that depart significantly from the conventional content and structure of modern tax treaties
- Protocols, except for those that were signed at the same time as a treaty.

Accuracy

The treaties were coded by a team of three LSE Masters students taking the LLM unit on International Tax Systems, and paid by ActionAid. Each treaty was coded independently by two students, and all disagreements between the coders were reconciled by the project manager. Based on quality control checks, we estimate that the dataset is 99% accurate. However, the dataset is designed for cross-country and cross-time comparisons, and claims about individual provisions should be checked against the treaty text. The exercise necessarily involved eliminating nuance and heterogeneity, boiling sometimes large amounts of text down to a single word or number. As a simple example, in some instances there are three, rather than two, dividend withholding tax rates, but the sheet only records the highest and lowest.

Indices

The dataset can be used to study individual treaty provisions, but it can also be aggregated to give an idea of the balance of the treaty as a whole. This is an inherently subjective judgement, which in practice will depend on the tax systems of the signatories and on their policy priorities. We have therefore decided to largely refrain from adding weightings to particular provisions. The only exception to this rule is the service PE and technical service WHT provisions. These occur twice in the indices, as a binary value (1 if included, 0 if not) and as a continuous value between 0 and 1 reflecting the number of days or the percentage tax rate specified in the clause. There are five aggregate figures, which include the average of the relevant provisions, as follows:

Index name	Articles covered	Number of components
Permanent establishment	5	9
Withholding tax	10,11,12	8
Other	7,8,13,16,18,21	9
Source index	Average of the above	26
UN	5,7,8,12,13,16,18,21	19

Source/residence index

This is calculated as:

$$\frac{\text{Average PE score} + \text{Average WHT score} + \text{Average score on other provisions}}{3}$$

As the indices record 9 PE and Other provisions, but 8 WHT provisions, this gives slightly more weight to each WHT provision overall. But it seems intuitively easier to understand if the overall score is divided into three equal-sized portions.

UN index

This is the average of the scores for the 19 relevant components, which includes provisions that are not in the UN model or that are in both the UN and OECD models. Two provisions that are included as options within the UN model are given half weightings. These are detailed overleaf.

Coding scheme

Ref	UN Article	Description	Source/ residence index category	Source/residence value	UN index value	Notes and questions
5i	5(3)(a)	Construction PE length in months (UN = 6; OECD=12)	PE	Linear scale from 24months = 0 to no threshold = 1	≤ 6m: 1 7-11m: 0.5 ≥ 12m: 0	If construction and assembly are different, use construction
5ii	5(3)(a)	Supervisory activities associated with construction (UN=yes, OECD=No)	PE	Yes: 1 No: 0	Yes: 1 No: 0	
5iii-b	5(3)(b)	Service PE length in months (UN=6, OECD=not included	PE	Yes: 1 No: 0		
5iii-c	5(3)(b)	Service PE length in months (UN=6, OECD=not included	PE	Linear scale from 18 months = 0 to no threshold = 1	≤ 6m: 1 > 6m: 0.5 NA: 0	
5iv	5(4)(a)	Delivery exception to PE (UN=no, OECD=yes)	PE	Yes: 0 No: 1	Yes: 0 No: 1	
5v	5(4)(b)	Delivery exception to PE (UN=no, OECD=yes)	PE	Yes: 0 No: 1	Yes: 0 No: 1	
5vi	5(5)(b)	Stock agent PE (UN=yes, OECD=no)	PE	Yes: 1 No: 0	Yes: 1 No: 0	For non-standard provisions, only those including the phrase "habitually maintains a stock" or equivalent are counted here
5vii	5(6)	Insurance PE (UN=yes, OECD=no)	PE	Yes: 1 No: 0	Yes: 1 No: 0	
5viii	5(7)	Dependent agent extension (UN=yes, OECD=no)	PE	Yes: 1 No: 0	Yes: 1 No: 0	Any wording with the same purpose as the UN model is counted.
7i	7(1)(b&c)	Limited force of attraction (UN=yes, OECD=no)	Other	Yes: 1 No: 0	Yes: 1 No: 0	Any wording about "the same or similar" is accepted here, even if limited to sales or to instances of tax avoidance.

7ii	7(3)	No deduction for payments to head office (UN=yes, OECD=no)	Other	Yes: 1 No: 0	Yes: 1 No: 0	Any "no such deduction" wording is counted here.
8i	8(2)	Source shipping right as a % (UN=yes[option B], OECD=no)	Other	Yes or NA: 1 No: 0	Yes: 0.5 No: 0	The article is only worth 0.5 in the UN index because it is optional in the UN model.
10i	10	FDI dividend WHT in % (OECD=5)	WHT	Linear scale from Exclusive residence taxation = 0 to 25% = 1		This is the lowest generally available rate (ie excludes special classes such as companies receiving incentives, government companies, particular industries). Exclusive source taxation scores 1, the same as the max available rate of 25%.
10ii	10	FDI dividend threshold in % (OECD = 25, UN = 10)	Not included in the indices			
10iii	10	Portfolio dividend WHT in % (OECD=15)	WHT	Linear scale from Exclusive residence taxation = 0 to 30% = 1		This is the highest generally applicable rate, typically below the FDI threshold, or for individuals. Exclusive source taxation scores 1, the same as the max available rate of 30%
11i	11	Interest WHT in % (OECD=10)	WHT	Linear scale from Exclusive residence taxation = 0 to 30% = 1		This is the lowest generally available rate, excluding rates for exceptions, if given, such as banks and governments. Exclusive source taxation scores 1, the same as the max available rate of 30%
12i	12	Royalties WHT in % (OECD=0)	WHT	Linear scale from Exclusive residence		The rate that looks to be most generally applicable to the categories of payment specified in

				taxation = 0 to 50% = 1		the OECD and UN models. Where the article specifies different rates for different types of income, coders were instructed to use 'the rule, rather than the exception', which sometimes entailed a subjective judgement. Exclusive source taxation scores 1, the same as the max available rate of 50%
12ii	12	Royalty definition: films or tapes used for radio or television broadcasting (UN=yes, OECD=no)	WHT	Yes: 1 No: 0	Yes: 1 No: 0	Any mention of TV is counted here [Note on consistency: currently, this scores 1 even if the clause provides for exclusive residence taxation]
12iii	12	Royalty definition: industrial, commercial or scientific equipment (UN=yes, OECD=no)	WHT	Yes: 1 No: 0	Yes: 1 No: 0	[Note on consistency: currently, this scores 1 even if the clause provides for exclusive residence taxation]
12iv-b	12a	Management or technical fees (UN and OECD = NA)	WHT	Yes: 1 No: 0		
12iv-c	12a	Management or technical fees (UN and OECD = NA)	WHT	Linear scale from Exclusive residence taxation = 0 to 20% = 1		Assumes NA means no source taxing rights, regardless of 21(3)
13i	13(4)	Source capital gains on 'Land rich' company (OECD and UN=yes, NA=capital gains article omitted)	Other	Yes or NA = 1 No = 0	Yes = 1 No = 0	
13ii	13(5)	Source capital gains on "other shares" (UN=yes,OECD=no, NA=no article)	Other	Yes or NA = 1 No = 0	Yes = 1 No = 0	

16i	16(2)	Top-level managerial officials (UN=yes, OECD=no)	Other	Yes = 1 No or NA = 0	Yes = 1 No = 0	
18i	18(2)	Shared taxation of pensions (UN=yes,OECD=no)	Other	Yes = 1 No = 0	Yes = 0.5 No = 0	Where the treaty distinguishes, source taxation of pensions as part of a recognised scheme count as yes, while unregistered pensions do not. Worth 0.5 in the UN index because this is an option within the UN model This clause is disregarded from indices if there is No Article
18ii	18(2/3)	Source taxation of social security pensions (UN=yes,OECD=no)	Other	Yes = 1 No = 0	Yes = 1 No = 0	This clause is disregarded from indices if there is No Article
21i	21(3)	Source taxation of other income (UN=yes,OECD=no,NA=no article)	Other	Yes or NA = 1 No = 0	Yes = 1 No = 0	Where this provision only covers specific types of income, 'no' is recorded.
27i	27	Assistance in the collection of taxes (later models = yes, older models = no)	Not included in the indices			