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Dutch tax treaties and developing countries

- a network analysis -

Maarten van 't Riet and Arjan Lejour

Summary

The Netherlands is a prominent conduit country for international income flows, which is used by multinational enterprises to reduce their taxes. The large number of bilateral tax treaties the Netherlands has concluded contributes to this role. On behalf of the Policy and Operations Evaluation Department (IOB) of the Ministry of Foreign Affairs, CPB has examined to what extent Dutch tax treaties with developing countries could lead to tax revenue losses for these countries and diverted income flows via the Netherlands. For this purpose the CPB has employed a network analysis that computes the taxation on dividend, interest and royalty flows. And, subsequently, the diversion of these flows over the international tax network is simulated. The reduced tax burden for the multinational enterprises, due to the rerouting of income flows, corresponds to tax revenue losses for national governments. The original CPB network analysis has been extended with four developing countries.

The loss of withholding tax revenue on outgoing dividend, interest and royalties varies by country and type of income flow. For the selection of developing countries the size of the tax loss is often considerable given the use of optimal avoidance routes; 100% loss is no exception. Moreover, the shares of individual treaties in the potential loss of tax revenue indicate the prominent role of the Netherlands. In some cases the tax treaty with the Netherlands is responsible for the entire loss of the withholding tax revenue of the developing country. Other countries concluded similar aggressive tax treaties with developing countries.

The introduction, in the Netherlands, of a conditional withholding tax on flows to low tax jurisdictions has hardly any consequence worldwide. For specific developing countries there may be an impact; the treaty with the Netherlands has less impact on the tax revenue loss of the country. For some other countries holds that the treaty with the Netherlands remains the first channel for the potential loss of withholding tax revenue.

1 Introduction

The Policy and Operations Evaluation Department (IOB) of the Ministry of Foreign Affairs conducts an evaluation of Dutch government policies and activities to strenghten tax systems in developing countries. The background of the evaluation is a Plan of Action 'Actieplan Beleidscoherentie voor Ontwikkeling' in which a number of different policy areas, thought to affect developing countries, are covered.

One of the goals is to combat tax avoidance/evasion with the objective to generate more government revenue, especially in low income countries and 'focuslanden'. Given this overarching main objective three objectives are identified of which the third is the reduction of the use of the Netherlands as conduit country for tax avoidance in other countries, including developing countries. This CPB memorandum delivers information for the IOB evaluation on this objective.

The Netherlands has a dominant role in the internationals flows of dividend, interest and royalties, see CPB Policy Brief 'Conduit country the Netherlands in the spotlight' (January 2019). Redirecting these flows through the Netherlands may be tax motivated. CPB has developed a tool which simulates the redirecting of income flows over the international tax network; bilateral tax treaties are of crucial importance here. With the network analysis for 108 jurisdictions we found that by optimal redirection multinational enterprises realize a 6%-point tax reduction. This benefit is a worldwide average and concerns the repatriation of dividend. The Netherlands and the United Kingdom, among others, are in the top of the ranking of most central countries in the network. The results has been published in an academic journal (ITAX, 2018) and has also been used for an impact analysis of the conditional withholding tax[1] on interest and royalties to low tax jurisdictions, on behalf of the Dutch Ministry of Finance (CPB, November 2019).

At the request of IOB, CPB has extended the network analysis with four developing countries. The tax savings for multinational enterprises, when they redirect optimally, corresponds to tax revenue losses for national governments. The foregone revenues will be presented for a selection of countries. These are, the added countries, Bangladesh, Ethiopia, Uganda and Zambia, and Egypt and Indonesia, two countries already part of the network. Where it is found that these six countries lose tax revenue, it will be indicated to what extent the treaties with the Netherlands are responsible for this loss. The analysis has been performed for dividend, interest and royalties. In addition, two policy scenario analyses have been executed. First, the impact of the Dutch conditional withholding tax on the selection of developing countries has been examined. Second, a strict application of the anti-abuse rules in the tax treaties of the Netherlands has been simulated.

The next section describes a number of examples of, possibly alleged, tax avoidance routes through the Netherlands. The network analysis is presented in Section 3, and the baseline scenarios in Section 4. Next, the tax revenue losses are discussed and the tax treaties responsible for these foregone tax revenues are examined in Section 6. Finally, Section 7 briefly discusses the outcomes of the policy scenarios.

[1] Rijksoverheid, 2019, Wet bronbelasting 2021 (link).

2 Background information

Multinational enterprises (MNEs) make use of differences in national tax laws to reduce their taxes. Such tax planning is called tax avoidance, as long as it is legal. In the competition for international capital, countries actively contribute to this, for example by reducing the rate of the corporate income tax. The idea is that the benefits of the attracted investment exceed the loss of tax revenue by the rate change. Other countries could counteract with similar strategies, with the risk of a 'tax race to the bottom'. International coordination is required to combat this, as it is to combat cross-border tax evasion. This discussion is not new (OECD, 1998).

Bilateral tax treaties are concluded between countries to avoid double taxation. Moreover, these aim to stimulate, reciprocally, cross-border investment. Often reductions of the standard rates for withholding taxes are agreed upon, reciprocally. However, this opens the possibility for MNEs to divert their investments via a holding in a treaty country, to take advantage of treaty benefits not found between the destination and originating country of the investments. This practice is called *treaty shopping*. The IMF (2014) identifies this practice as particularly harmful for developing countries, because these countries give up taxing rights.

It may be questioned whether tax treaties conducted by developing countries are always to their own benefit. An example is the former treaty between the Netherlands and Mongolia. A mining company has, from Canada, invested in mining raw natural resources in Mongolia. Because of a restructuring of the company, the investment ended up with a holding company in the Netherlands, with the mother company in Australia. The treaty with the Netherlands features a zero tax rate on distributed dividend. Because of this, Mongolia would lose withholding tax revenue. In 2013 it unilaterally terminated the treaty with the Netherlands. Mongolia did the same with the treaties with Luxemburg and the United Arab Emirates. This particular situation with Mongolia was already noted in the very first publication on the network analysis (CPB, 2014).[2] Notwithstanding the termination of the treaty, it is claimed that taxes in Mongolia are still being avoided via the Netherlands (Somo, 2018[3], 2020[4]).

Indonesia has a tax treaty with the Netherlands. This treaty is being used, according to Somo (2019)[5], for large scale tax avoidance because of the low withholding tax rates. This applies in particular for interest. Hong Kong and the United Arab Emirates are also mentioned in this respect. The network analysis will indeed show that the treaties with the Netherlands, and with the two jurisdictions mentioned above, will be responsible for potential tax revenue loss of Indonesia by *treaty shopping*.

The previous tax treaty of Malawi with the Netherlands seems to have caused Malawi to have lost millions of euros of tax revenue, as indicated by Action Aid (2015)[6]. Again an Australian mining company was involved. Clearly, net capital importing countries are susceptible for *treaty shopping*.

To counter inappropriate use of tax treaties, it is current practice to include anti-abuse clauses. This was the case with a new tax treaty concluded in 2015 by Malawi and the Netherlands. However, Action Aid NL

[2] Only in this first publication on the network analysis we reported on the loss of tax revenue for individual countries.
[3] Example tax avoidance Mongolia
[4] Example tax avoidance Mongolia
[5] Example tax avoidance Indonesia
[6] Example tax avoidance Malawi

points out to the fact that *management fees* are not covered by the anti-abuse clauses.[7] This feature makes that tax avoidance via the Netherlands remains possible. Malawi is not part of the list of countries of the network analysis. Even so, the network analysis is not applied on *management fees* or the payments for technical services, because we do not have the withholding tax rates for this category at our disposal for the entire network.

End of February 2020 Ivestico, a platform for investigative journalism, reported that rose growers in Kenia are avoiding local taxes using Dutch shell companies.[8] This not part of the current study as there is no active tax treaty between Kenia and the Netherlands, but this illustrates that tax avoidance is not limited to *treaty shopping*, whereas this study is.

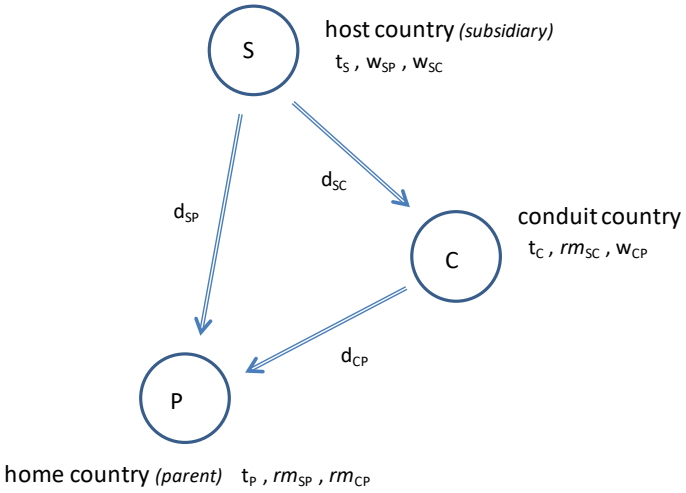
From these reports the idea emerges that some tax treaties may be crucial in the tax revenue losses of developing countries. These treaties are used by multinational enterprises to reduce their tax burden. Such treaties may be denoted as tax aggressive. This notion is examined here. We specifically report for Bangladesh, Egypt, Ethiopia, Indonesia, Uganda and Zambia.[9]

3 Network analysis of withholding taxes

This section presents the applied method and a number of choices. The network analysis was originally developed for dividend distributed in international participations. It considers the international tax system as a transportation network and it computes the 'shortest' routes that minimise the taxes that multinational enterprises (MNEs) need to pay on the repatriation of profits. The tax 'distances' are constructed from the tax rates of the corporate income tax, the non-resident withholding taxes on dividend and the double tax relief systems. Of particular interest are the bilateral tax treaties with reciprocal reduction of the withholding tax rates. The MNEs can reduce the taxes on their repatriated profits by choosing the 'cheapest' route over the network. This could be a direct route, or it could be an indirect via conduit entity residing in a third country, a conduit country. In the latter case we speak of *treaty shopping*. This is depicted in Figure 3.1. The method of the network analysis is more extensively described in Van 't Riet and Lejour (2018).

[7] https://actionaid.nl/2015/06/17/the Netherlandsse-belastingroute-kost-malawi-tientallen-miljoenen/
[8] https://www.platform-investico.nl/artikel/the Netherlandsse-rozenkwekers-ontlopen-belasting-in-kenia/
[9] The selection of these countries was part of a preliminary investigation and is reported on in Annex 1 of the Dutch version.

Figure 3.1 Treaty shopping with one conduit country



With the original network of 108 jurisdictions, *treaty shopping* leads to a potential reduction of the worldwide average of taxes on repatriated dividend of about 6%-punt. An indirect route is for two thirds of all country pairs cheaper than the direct route. Moreover, we have a centrality indicator which identifies the countries most used as conduits. Based on 2013 data these are, for dividend repatriation, the United Kingdom, Luxemburg and the Netherlands.

Validation of the method and availability of data

The results have been obtained with public available tax parameters and an objective, mathematical, method. Moreover, the centrality indicator has been used as an explanatory variable in regressions of bilateral Foreign Direct Investment (FDI); the indicator proves to be statistically significant in a large number of specifications (Van 't Riet and Lejour, 2018). Countries with a high ranking as a conduit, do indeed have more foreign investment flowing through the country. Two issues remain to be noted. First, the data used to validate the network analysis are bilateral investment stocks. Ideally, bilateral dividend flows would be used. These are, however, not available for a sufficient number of countries in the analysis. Second, the FDI data which we use (IMF, CDIS) do contain the phenomenon that we are examining, i.e. the diversion of investment for tax motives, as well as regular bilateral investment. Ideally, again, we would have these data separated. This is not the case.

For years in a row the FDI statistics show the same top three of countries with the largest investments, both incoming and outgoing. These are the Netherlands, the United States and Luxemburg. For any future *ex post* evaluation of changed Dutch policy in the area of international taxation these are the statistics to be reviewed first.

GDP-weighing of the country pairs

The results of the network analysis are presented at three levels; the world level, country level and at the level of individual links, that is, the direct bilateral connection between two countries in one direction. There are 108 x 107 = 11556 of such links in the original analysis. This high number makes aggregation of the results unavoidable and for this we use weighted averages. With the analysis for dividend we mostly applied double GDP-weights; we distribute 100 units over the 108 countries according to their share in total (world = 108) GDP, next for each of these 108 source countries we determine the flow to each of their 107 destinations, again proportional to GDP. Our motivation for this weighting is that we deem the economic

relevance between to large economies, say USA-JPN, more important for dividend repatriation than a link between two small countries. For interest and royalties other considerations are at stake. We return to that below.

Policy analysis: a conditional withholding tax on interest and royalties

CPB has analysed, on behalf of the Dutch Ministry of Finance, the impact of the planned withholding tax on interest and royalty flows to low tax jurisdictions (CPB Memo November 2019[10]). Different from dividend, the Netherlands does not levy a withholding tax on interest and royalties. The introduction of the measure makes the flows from the Netherlands to the indicated jurisdictions disappear. Worldwide, however, the potential for tax avoidance by *treaty shopping* is not reduced; other countries take over the role of the Netherlands as conduit.

The CPB policy analysis mentioned above required the network analysis to be extended with interest and royalty payments. Mostly based on 2018 tax rates a baseline is constructed where the Netherlands does not levy taxes on outgoing interest and royalty flows. Next, in a scenario analysis the conditional withholding tax is implemented. In addition, a new baseline for dividend is created, based on 2018 data. Since royalty and interest payments are treated differently from dividend by the tax authorities, the tax 'distances' are also computed differently. Distribution of dividend usually takes place after corporate income taxation in the source country. Next the home country[11] may still levy corporate taxes, where of the taxes paid in the source country are credited. In most cases there will be no corporate taxation in the home country because of the dividend participation exemption. This is different for interest and royalty payments. The payments are deducted from taxable corporate income in the source country. With international payments these are expected to be taxed in the destination country, unless the payments are directly channeled to another country. If the latter is not the case, the corporate income tax of the home country will be applied. Again, taxed paid in the source country may be offset (deducted or credited). Unlike with dividend, corporate tax is hardly exempted, but offsetting is common, given that the taxes due in the destination country are at least equal to those paid in the source country. The network analysis has been adapted to take all this into account.

We emphasize once more that the network analysis determines the optimal repatriation routes and *treaty shopping*; it does not model the erosion of the tax bases in source countries that strategic allocation of intellectual property and debt entails. It is with these strategies that MNEs have most to gain.[12]

Alternative weighting of country pairs with interest and royalty flows

In a first exercise we found, with GDP weighting of the country pairs, minimal worldwide average tax benefits of the optimal diversion of interest and royalty flows, of less than 1%-point, while for dividend this average is about 6%-point. Moreover, only for a fifth and a fourth of all country pairs, there is a tax benefit by using indirect routes, for interest and royalties respectively. For dividend this share is about two thirds of the country pairs. It is also clear that not all country pairs are relevant for profit shifting; interest and royalty costs are preferably deducted in countries with a high statutory tax rate, while the payments are supposed to end up in low tax jurisdictions. Strategic location of intellectual property is an example of this. This tax

[10] http://www.cpb.nl/netwerkanalyse-van-een-the Netherlandsse-voorwaardelijke-bronbelasting-op-renten-en-royaltys

[11] Home country = destination country = *residence*.

[12] Recently an extensive international literature has emerged, estimating the impact of these strategies on tax revenue, see e.g. Beer et al. (2019), Crivelli (2016), Dharmapala (2014), Hines (2014) and OECD (2015). For dividend and interest Janský en Šedivý (2019) estimate the loss of revenue for a number of developing countries. They identify that the Netherlands has a prominent role in the losses.

motives differ from the those of *treaty shopping* which we examine with the network analysis. This leads us to apply an alternative weighting scheme for interest and royalties, reflecting the considerations above.

The alternative version (dCIT[13]) only has positive weights for those country pairs AB for which holds that the statutory tax rate of country A is higher than that of country B: cit(A) > cit(B). At the same time, as the reverse of the condition holds, the weight of country pair BA will be zero. We combine this with the economic relevance of source country A; GDP(A). Finally, the larger the difference in tax rates the larger the incentive to shift profits, and hence the weights. All this amounts to: dCIT(AB) = GDP(A)*(cit(A) – cit(B)). With these weights the worldwide average *treaty shopping* gain is almost 8%-point, for interest and royalties.

As stated before, the network analysis does not model the profit shifting by intra-group loans and sub-licencing. However, for every flow with the alternative weights holds that profits are reduced in a high tax country and are ultimately taxed in a country with a lower tax rate. The world average of this *direct tax gain* is 8.7%-point for interest and 7.6%-point for royalties. The tax benefits of diversion are on top of this.

Finally, the network analysis is applied on dividend, interest and royalty flows each independently. This implies that transformation of type of flow in the conduit countries, say from dividend to interest, is not considered. This is a limitation of the approach, especially for the conduit role. In a study with firm level data of Special Purpose Entities in the Netherlands substantial transformed income flows are observed.[14]

4 Baselines 2018 with 112 countries

Extension with four developing countries

The set of countries covered by the network analysis has been extended with four developing countries; Bangladesh (BGD), Ethiopia (ETH), Uganda (UGA) and Zambia (ZMB). These countries are supported by the Netherlands with bilateral and multilateral activities and with these countries the Netherlands has a bilateral tax treaty.[15]

The data required for the network analysis are tax parameters from all 112 jurisdictions in the network. For earlier studies the data for the original 108 countries were obtained from the International Bureau for Fiscal Documentation (IBFD). The parameters concern the year 2018 or, when unavailable, as recent as possible.[16] This was completed with the data for the four new countries.

The statutory rate of the corporate income tax is required for each country, as are their standard rates of the non-resident withholding taxes on dividend, interest and royalties, and the double tax relief systems. Moreover, we use the reduced withholding tax rates as agreed in the treaties. These are bilateral data. Sometimes reduced rates are only applicable to specific sectors, or depend on the degree of participation (percentage of shares). For dividend we took the lowest rate found[17] assuming that MNEs would structure

[13] dCIT : delta Corporate Income Tax, the (positive) difference in the corporate tax rate, weighted with the GDP of the source country.
[14] Lejour, Arjan, Jan Möhlmann, Maarten van 't Riet and Thijs Benschop, 2019, Dutch Shell Companies and International Tax Planning, CPB Discussion Paper. For a selection SPEs we find on average for 2014-2016 the following: dividend passing through as interest is 4.1 bln euro, dividend as royalties 6.3 bln euro and interest as dividend 5.4 bln euro.
[15] For an explanation of this selection see Annex 1 of the Dutch version of the Memo.
[16] The data have been extracted from the IBFD Tax Research Platform between end of January and March 2018.
[17] Unless, for example, this rate is only applicable to pension funds.

such that the conditions would be met. For interest and royalties we have applied a different heuristic; when multiple rates were encountered we select the one-but-lowest rate, since often the lowest rate was applicable to one specific sector. Apart from the bilateral treaties we take into account the Parent Subsidiary Directive and the Interest and Royalty Directive of the EU; these directives specify that within the EU there is no withholding taxation between Member States. The United Kingdom has been treated as a Member State of the EU.

Baseline results

We first present the results of the baseline scenarios for the three income types: dividend, interest and royalties. The next section will treat the loss of tax revenue for the individual countries. The three baselines concern two weighting schemes; GDP-weights for dividend and the alternative weights for interest and royalties, as discussed in Section 3.

Table 4.1 shows the results of the baselines for each of the income flows for the 112 countries. These scenarios are also in the study for the Ministry of Finance (CPB, 2019), covering the original 108 countries. The differences are very modest. The worldwide average repatriation taxation of dividend is tens of a %-point higher, but the benefit of diversion is exactly equal. Also the ranking of conduit countries is identical. For interest the Netherlands climbs from position 6 to position 4 by the extension with the four countries. For interest and royalties the benefit of *treaty shopping* is, on average worldwide, about two-tens of a %-punt higher.

The important difference in the results between dividend on the one hand and interest and royalties on the other hand is the double taxation of dividend. The worldwide average, GDP-weighted, rate of the corporate income tax (CIT) is 25%.[18] Since with interest and royalties the CIT is due in the residence country, we have in Table 4.1 included the CIT for dividend, due in the source country. In earlier publications we did not show this as it is not relevant for treaty shopping.

Table 4.1 Baseline scenarios 112 countries - dividend, interest and royalties

Financial Flow *Weighting*	Dividend *GDP*	Interest *ALT.*	Royalty *ALT.*
Direct tax benefit	n/a	8.74	7.60
Direct routes (% tax)	32.37	19.88	21.02
Optimal routes (% tax)	28.18	12.29	13.05
Tax benefit Treaty shopping (% tax)	4.19	7.59	7.97
Optimal indirect routes (% country pairs)	67.4	'29.6'	'34.1'
Top 5 conduits	GBR	DEU	CHE
2	NLD	RUS	RUS
3	SWE	LUX	SWE
4	LTV	NLD	NLD
5	EST	SWE	NOR
Position of the Netherlands	2	4	4

[18] 25.36% for the 112 countries, with the new US rate, i.e. after the tax reform of 2018.

The average double taxation on repatriated dividend via the direct routes is 9.4%, with optimal diversion this is 3.8%. Hence, the average reduction of taxation by *treaty shopping* is therefore 5.6%-point. On the basis of profit before taxation in the source country this is 4.2%.[19] The benefit of optimal diversion for interest and royalties is higher, respectively 7.6% and 8.0%.

Interest and royalty flows are less taxed than dividend, because interest and royalties are not taxed in the source country. In fact, the interest cost and royalty payments can be deducted from the taxable profits in the source country if these are sufficiently high. This amounts to a direct tax benefit of, on average, 8.7%-point for interest and 7.6%-point for royalties (top of Table 4.1).

Table 4.1 also shows the percentage of country pairs for which an indirect route is cheaper than a direct route. For dividend this is two thirds of all country pairs. With interest and royalties we consider only half of the country pairs, because of the alternative weights (only from high to low tax). For about 30% of those country pairs there exists an indirect route that is cheaper than the direct route.

Finally, Table 4.1 presents the top 5 of the ranking of the conduit countries. For all three income types the Netherlands is in the top 5. In general, EU Member States are attractive as conduits, because of the Parent Subsidiary Directive and the Interest and Royalty Directive in the EU. For dividend GBR, LTV and EST have a standard withholding tax rate of zero. SWE has concluded a relatively large number of tax treaties.

The top ranking of RUS and DEU with interest flows may seem surprising. It appears that both Russia and Germany have negotiated low tax rates on interest with their treaty partners, lower than other countries have done with these treaty partners. This makes it relatively advantageous to channel interest to Russia and Germany. For Russia this applies for its treaty with China; it does not levy a withholding tax on interest flows to Russia, and for royalties there is a rate of 6% instead of the standard rate of 10%. Since China is the second largest economy in the world the flows from China have a relatively high weight. For Germany there is a similar situation with a zero rate on interest from Japan.

5 Tax revenue losses

The tax benefit for MNEs are the tax revenue losses for national governments.[20] The latter is the perspective in this section. We compare the situation where only direct routes are allowed between a pair of countries and the situation with optimal routes, which allows for indirect routes. First, we discuss the four mechanisms that affect tax revenues, and second, the results belonging to the baseline scenarios from the previous section.

Optimal routes: four mechanisms of changed tax revenues

International enterprises can structure their investments such that they make use of the most advantageous rates of the withholding taxes as set in the bilateral tax treaties. *Treaty shopping* signifies

[19] So, the 32.37% from Table 4.1 = 100*(1 – (1 – 25.36/100)*(1 – 9.40/100)), and the 28.18% = 100*(1 – (1 – 25.36/100)*(1 – 3.78/100)). And 32.37% - 28.18% = 4.19%.

[20] Lower profit and withholding taxes imply a lower net cost of capital which may increase the level investment and productivity, which in turn may increase the revenue of labour taxes. This is not taken into consideration here.

therefore foremost a reduction of withholding taxes and tax revenue losses in source countries. This is the dominant mechanism.

The reduction of the withholding taxes could increase the tax base in the home country (*residence*). Tax revenues may increase, depending on the double tax relief system of the home country. Consider the *credit* method as relief to avoid double taxation. The withholding taxes already paid are taken as a 'credit' with the CIT in the home country. With less taxes already paid, less can be credited.

The third mechanism derives from the fact that some countries have preferable relief systems for their treaty partners. For example, where the default system is the *credit* method, this can be replaced by *exemption*, leading to a reduction of tax revenue in the destination country. We do indeed find that optimal routes make use of these preferential relief systems. This mechanism applies almost exclusively for dividend.

Finally, there is *conduit taxation*. A dividend flow passing an intermediate station could, in principle, be taxed. Except when the CIT rate would be zero such an intermediate station would not be selected on an optimal route. For passing interest and royalty flows, it holds that the incoming flow will be taxable, but simultaneously the outgoing flow will be deducted from the taxable profit. *Conduit taxation* therefore always consists of withholding taxes. And, given the nature of the optimal routes (tax minimising) the revenues will be low. However, when other tax revenues are modest, a minimal *conduit* tax revenue may be relatively large for some countries.

Results

For each of the income flows we present the tax revenue loss in a table. We do so for the six selected developing countries (BGD, EGY, ETH, IDN, UGA en ZMB) and for comparison we add the United States, China, Germany and the Netherlands (USA, CHN, DEU en NLD).

Table 5.1 shows the tax revenue and the loss caused by treaty shopping for dividend. For the reference situation of direct routes the revenues are shown for the withholding tax (*SRC0*) and for the corporate income tax in the residence country (*RES0*). For the situation of optimal routes there are also the possible revenues of conduit taxation (*CON*). The tax losses are presented as percentage of the total (*TOT*) and for the withholding tax (*SRC*).

Bangladesh receives in the reference situation 4.6 units of withholding taxes on dividend and 1.5 units of corporates taxes as residence country. For the situation with diversion of flows these taxes are respectively 1.7 and 1.8 units. These numbers are thousands of a percent (0,001%) of the world total of repatriated and taxable dividend (100%= 10000 units).

At the bottom of the table we observe for the world total (WLD) a percentage of almost 7.7% (770 of 10000 units) for withholding taxes in the reference situation (direct routes). The total of source and residence taxation for Bangladesh is 6.1 (= 4.6 + 1.5) units in the reference, with *treaty shopping* this becomes 3.5 (= 1.7 + 1.8) units. Bangladesh does not have *conduit taxation* revenues. The loss of tax revenue as percentage of the total is 100*(6.1 – 3.5)/6.1 = 42.6%. For the withholding taxes this is 100*(4.6 – 1.7)/4.6 = 62.6%.

Table 5.1 Tax revenue - dividend

	Direct	Optimal			Tax revenue loss %		
	SCR0	RES0	SRC1	RES1	CON	TOT	SRC
BGD	4.6	1.5	1.7	1.8		42.6	62.6
EGY	2.8	2.2			0.3	93.1	100.0
ETH	1.0	0.2	0.6	0.4	0.0	9.0	38.9
IDN	15.4	1.0	7.3	0.3	0.1	53.8	52.9
UGA	0.5	0.04	0.0	0.2		73.6	100.0
ZMB	0.4	0.1	0.0	0.2	0.0	51.6	98.7
CHN	122.5	17.1	77.9	3.8	0.5	41.2	36.4
DEU	30.9	6.6	0.3	0.0	0.8	97.2	99.2
NLD	0.8				0.0	99.8	100.0
USA	183.2	6.1			0.0	100.0	100.0
WLD	769.6	170.3	207.4	150.7	20.9	59.7	73.1

Note: the first 5 columns show the units of taxation on 10000 units of repatriated dividend worldwide.

Treaty shopping potentially leads to a 60% loss of worldwide tax revenue on repatriated dividend. For the (non-resident) withholding taxes this is a loss of almost three quarters. Out of the ten selected countries six lose their withholding tax revenue entirely or almost entirely. Egypt and Uganda lose all withholding taxation on outgoing dividend, Zambia almost all. The remaining four countries lose at least a third or more. In addition, it is clear that not only developing countries lose tax revenues.

The pattern is somewhat different for interest payments, see Table 5.2. The losses are smaller. We also observe that worldwide the residence tax revenue increases, from about 6.4% to 7.8% (bottom line of Table 5.2). This is caused by the increased tax base for residence taxation following the reduced withholding taxation (the second mechanism). Uganda and the Netherlands would even gain in residence tax revenue with optimal structures. The Netherlands does not levy withholding taxes on outgoing interest and therefore does not lose revenue there. The potential losses for the developing countries remain considerable and vary from 20% to 60%.

Table 5.2 Tax revenue - interest

	Direct	Optimal			Tax revenue loss %		
	SCR0	RES0	SRC1	RES1	CON	TOT	SRC
BGD	12.6	0.03	8.8	0.03		29.9	29.9
EGY	4.8	4.9	3.5	5.9		3.2	27.5
ETH	1.4	1.2	1.1	1.4		3.4	21.0
IDN	17.9	5.5	7.3	5.8	0.01	44.1	59.0
UGA	0.7	1.2	0.6	1.4		-4.4	14.7
ZMB	0.9	0.03	0.5	0.03	0.1	36.2	48.7
CHN	123.7	5.5	56.5	5.7	1.3	50.8	54.3
DEU		2.4		2.4			
NLD		10.1		10.2		-0.8	
USA	316.4	8.5	10.1	8.9	0.1	94.1	96.8
WLD	1350.0	638.2	414.3	783.8	31.2	38.2	69.3

Note: the first 5 columns show the units of taxation on 10000 units of interest payments worldwide.

The pattern for royalties is similar to that of interest. Apart from the Netherlands, we find that residence tax revenue increases for Ethiopia and Uganda, such that these countries also would gain in total revenue. With royalties it would concern the possible location of intellectual property (IP) in these countries. The variation in the withholding tax revenue is large. For the developing countries this ranges from no-loss-at-all for Ethiopia to 68% for Zambia.

Table 5.3 Tax revenue - royalties

	Direct	Optimal			Tax revenue loss %		
	SCR0	RES0	SRC1	RES1	CON	TOT	SRC
BGD	12.5	0.03	10.0	0.03		19.8	19.9
EGY	4.8	4.1	0.7	5.0	0.02	36.2	86.1
ETH	0.7	1.1	0.7	1.2		-7.0	0.0
IDN	18.3	4.4	7.6	4.5	0.01	46.6	58.8
UGA	0.7	0.8	0.6	1.2		-16.7	14.7
ZMB	1.2	0.03	0.4	0.03	0.1	58.8	68.1
CHN	127.7	4.6	101.4	4.8	0.03	19.7	20.6
DEU	60.3	2.4	20.8	2.4	5.5	54.3	65.6
NLD		11.3		11.4		-0.6	
USA	313.1	10.5	7.3	10.8	0.7	94.2	97.7
WLD	1505.0	597.7	516.0	751.2	38.3	37.9	65.7

Note: the first 5 columns show the units of taxation on 10000 units of royalty payments worldwide.

6 Aggressive tax treaties

In the previous section we identified the share of withholding tax revenue for the selected countries that will be forgone when MNEs optimally chose their investment routes. In this section, we identify the tax treaties that are responsible for these losses. This concerns the first country or station in the optimal routes that lead to tax reduction (for the MNEs). This first station is determined by a tax treaty concluded by the developing country with a reduced withholding tax rate. Different treaties can determine the first part in the optimal routes from a given developing country, hence we again present shares. For each income type we present a table with as columns the selection of developing countries, for comparison Germany and the Netherlands have been added. The rows are the treaty partners that appear as the first intermediate country on optimal routes (to all other 110 countries). Only shares of 5% or more are presented, to avoid showing too many treaty partners.

Table 6.1 presents the shares for repatriated dividend. With a dividend flow starting from Egypt (EGY), Bahrain (BHR) is the first intermediate station on 13% of the optimal routes. There is indeed a treaty between Egypt and Bahrain with a reduced withholding tax rate on dividend. Egypt has a standard rate of 10% but applies a reduced rate of 5% to a number of countries. For eight countries there is a rate of 0%. These countries are BHR, Malaysia (MYS), NLD, Switzerland (CHE), the United Arab Emirates (ARE), the UK (GBR) and the US (USA). Number eight, France, is apparently not a spider in the web for Egypt such that it attains a share 5% or more. For Bahrain we find 13% of the loss of withholding taxes on dividend from Egypt.

Table 6.1 Shares of withholding tax loss (> 5%) by treaty partner - dividend

	WLD	BGD	EGY	ETH	DEU	IDN	NLD	UGA	ZMB
BHR			13.0				3.0		
CYP				17.7	4.5		3.9		
DNK	5.2				2.9				
FIN	5.8				2.7				
HKG						41.8	3.0		
IRL				14.8	3.2		2.5		100.0
MYS			17.6				3.7		
NLD	9.1		16.4	16.2	3.8	58.2		100.0	
PRT				12.0					
SGP				15.8			3.7		
SVK				18.4	4.9		4.0		
SWE	5.9				2.7				
CHE	3.7		12.5						
ARE		100.0	17.6				3.7		
GBR	10.2		19.8		4.9		4.0		

Table 5.1 shows that Egypt loses 100% of its withholding taxes on dividend following *treaty shopping*. For the MNEs it is of course optimal to make use of the treaties of Egypt in which it was agreed not to levy withholding taxes. The 100% loss is therefore no surprise.

For Bangladesh (BGD), Uganda (UGA) and Zambia (ZMB) there is one treaty partner responsible for 100% of the loss on withholding taxes on dividend. These losses are due to the treaties with, respectively, the United Arab Emirates (ARE), the Netherlands and Ireland.[21] Bangladesh has a standard rate of 20%, for a number of countries a rate of 15%, for 20 partners a 10% rate, and only for the United Arab Emirates (ARE) a rate of 5%. This implies that not all revenues will vanish, Table 5.1 shows that the loss is 62.6%. The treaties with the Netherlands and Hong Kong combined are responsible for a 100% loss of Indonesia (IDN). Concerning Germany and the Netherlands we know (Table 5.1) that these countries lose withholding tax revenue following treaty shopping. Here we observe that no treaty partner is responsible for more than 5% of the loss. This is a consequence of the Parent Subsidiary Directive, which makes all EU Member States a costless first country.

The columns WLD give the most important first country on the optimal routes, on average for all countries as source. For dividend the top 5 is GBR, NLD, SWE, FIN and DNK. The ranking of the first stations is similar to that of the conduit countries, but is not identical.

Table 6.2 Shares of withholding tax loss (> 5%) by treaty partner – interest

	WLD	BGD	EGY	ETH	IDN	UGA	ZMB
CYP				30.0			
DNK						30.1	
FRA				30.0			
DEU	17.5						
IRL				4.5			100.0
LUX	6.6						
MLT			45.3				
MUS			5.6			6.0	
NLD	4.5	100.0		30.0	50.0	30.1	
NOR						30.1	
RUS	13.3						
CHE	5.3						
ARE			45.3		50.0		

Table 6.2 concerns the shares of revenue losses regarding interest and is more sparse. Also here the criterion is applied that the shares must equal or exceed 5%.[22] Germany and the Netherlands are no longer shown as source country, but they do appear as first countries on optimal routes. Less partner countries are found with a treaty such that its share in the loss of withholding taxes on interest is 5% or more. The corresponding table with the percentages of revenue loss is Table 5.2. For two of the selected countries, BGD and ZMB, the tax revenue loss is caused by one country (100%), respectively the Netherlands and Ireland.[23] The treaty with the Netherlands is also responsible for half of the potential loss for Indonesia. The

[21] The results between Zambia and Ireland deserve an explanation. The data set contains the reduced rates from an old treaty (1971) between these two countries. Since 2016 a new treaty is in force with higher rates. The outcomes in the tables illustrate the need for developing countries to review and possibly revise their tax treaties. At the same time it illustrates the sensitivity of the data from the treaties and data sources on the outcomes.

[22] The tables also show shares between 2.5% and 5% for partner countries when at least one share exceeds 5%.

[23] Concerning Zambia and Ireland see an earlier footnote.

other half is accounted for by the treaty with the United Arab Emirates. The treaties with the Netherlands are for about 30% the channel of the potential loss on withholding taxes on interest for Ethiopia and Uganda.

Table 6.3 presents the shares for royalties. The ten treaty partners of Germany in the table all have concluded a zero rate. This applies to other countries too, but they are less central in the network. A similar mechanism works for Bangladesh. It levies a standard rate of 20% but has a reduced rate of 10% for a large number of countries. Only five of these countries are in Table 6.3, as the other countries are less central in the network, and not accommodating access to tax reducing routes.

Zambia loses, with optimal repatriation by MNEs, all its withholding taxes on royalties by the (previous) treaty with Ireland. From Indonesia the optimal routes of the MNEs use for the larger part the treaty with United Arab Emirates. Ethiopia is not in Table 6.3 because there are no tax losses; the treaty rates are equal to the standard rate of Ethiopia of 5%. The loss of withholding tax revenues on outgoing royalties can be found in Table 5.3.

Table 6.3 Shares of withholding tax loss (> 5%) by treaty partner – royalties

	WLD	BGD	EGY	DEU	IDN	UGA	ZMB
AUT			94.8				
CYP	4.1			9.4			
HKG					3.0		
HUN	4.3			9.4			
IND			5.2				
IRL							100.0
ISR	5.2						
LVA	5.9			9.4			
LIE				9.4			
LUX	4.3			9.4			
MLT	2.6			9.4			
MUS						8.3	
NLD	8.3	18.1		9.4			
NOR	5.5	18.1		9.4		84.9	
RUS	13.3						
ESP	4.5						
SWE	8.4	18.1		9.4			
CHE	10.9	18.1		9.4			
ARE	2.9	18.1			97.0		

The role of the Netherlands

The prominent role of the Netherlands as conduit country for tax avoidance has been noted before. In this study it can be found in its high position in the ranking of conduit countries (Table 4.1). The current analysis shows that the Netherlands is also an important first country on optimal, tax minimising, routes. The position of the Netherlands in these rankings is 2nd, 5th and 4th, respectively, for dividend, interest and royalties.

Moreover, the Netherlands appears relatively often as first country on the routes whereby developing countries lose withholding tax revenues. This suggests that the Netherlands has conducted an aggressive treaty policy. This applies to various other countries too, such as the United Arab Emirates. The aggressive treaty between Ireland and Zambia has meanwhile been revised.

7 Mitigating policy scenarios

This section briefly presents the results of two policy scenarios. First, we consider the conditional withholding tax to low tax jurisdictions. This policy will come into effect at January 2021 and will be applied on outgoing interest and royalty flows. On behalf of the Dutch Ministry of Finance CPB, has already analysed this policy. Now, the impact on the selection of developing countries is taking into account. Second, we simulate the consequences of anti-abuse clauses in the Dutch treaties would be fully effective; reduced rates would then no longer be applicable on indirect routes. In that case, The Netherlands is not expected to be a first intermediate country on tax minimising routes.

The conditional withholding tax of the Netherlands to low tax jurisdictions

The earlier network analysis of the conditional withholding tax (CWT) concluded that the Dutch flows to the low tax jurisdictions indeed vanish but that the worldwide potential for the gains from treaty shopping is not reduced. The latter is caused by other countries substituting for the role of the Netherlands as conduit country.

Dividend

For the sake of completeness we run this scenario also for dividend. The Netherlands does not have a double tax treaty with most low tax jurisdictions and hence there are no reduced withholding tax rates. This means that the standard rate of 15% is applicable, a rate not attractive for optimal routes. The rate applied in the simulation is 21.7%.

At world level there is no effect on the reduction of the double taxation. Also, the top 5 positions on the ranking of conduit countries is not changed, the Netherlands remains in 2nd place. The losses on dividend withholding tax revenue are also identical, see Table 5.1. However, the shares of the first intermediate countries are slightly different. In Table 7.1 we repeat the row for the Netherlands from Table 6.1 of the baseline scenario; some minor can be observed.

Table 7.1 Dutch shares in withholding tax revenue loss of selected countries (> 5%) – dividend

	WLD	BGD	EGY	ETH	DEU	IDN	NLD	UGA	ZMB
Base	9.1		16.4	16.2	3.8	58.2		100.0	
CWT	8.6		15.6	15.6	3.5	56.7		100.0	

Interest

Also for interest the worldwide average of the tax advantage of treaty shopping remains equal. There is an impact on the Netherlands; in the ranking of conduit countries the Netherlands fall from position 4 to position 15. Still, the loss of withholding tax revenue on outgoing interest remains the same as in Table 5.2. The Dutch role is taken by other conduit countries, see Table 4.1. The results for the first countries are

diverse. For two of the countries, BGD and UGA, the treaty with the Netherlands remains, even with the CWT, the channel for the tax revenue loss. For two other developing countries, ETH and IDN, the Dutch share falls considerably. The substituting countries can be found in Table 6.2 (CYP and FRA for ETH, and ARE for IDN).

Table 7.2 Dutch shares in withholding tax revenue loss of selected countries (> 5%) – interest

	WLD	BGD	EGY	ETH	IDN	UGA	ZMB
BASE	4.5	100.0		30.0	50.0	100.0	
CWT	1.4	100.0		5.6	8.0	100.0	

Royalties

The result of the policy scenario for royalties is similar; worldwide no change in tax reduction and no change in tax revenue losses. In the conduit ranking the Netherlands drops from position 4 to 14. Table 7.3 presents the results for the shares of the Dutch treaties (see Table 6.3). Again we observe that implementation of the CWT does have an impact. Bangladesh is the only country of the selection where the Dutch treaty matters. Different countries substitute for the role of the Netherlands.

Table 7.3 Dutch shares in withholding tax revenue loss of selected countries (> 5%) – royalties

	WLD	BGD	EGY	IDN	UGA	ZMB
BASE	8.3	18.1				
CWT	1.9	4.6				

Concluding: implementation of the conditional withholding tax has hardly any impact at world level but for specific developing countries the impact of the Dutch policy may be considerable.

Effective anti-abuse clauses in the Dutch tax treaties

A second set of policy scenarios was implemented. Here it is assumed that the anti-abuse clauses in the treaties of the developing countries with the Netherlands are fully effective. This implies that the reduced rate with the Netherlands is not applicable on indirect routes but that the standard rate is applied.

The consequence of this strict implementation of anti-abuse clauses is that the Netherlands will not be used as a first station on tax minimising routes. This is indeed the outcome. Therefore we are very brief here. The worldwide tax reduction remains equal. Also the tax revenue losses do hardly change. The pattern of the shares for the Netherlands as first station are as in Table 7.4 for dividend. The results for interest and royalties are very similar.

Table 7.4 Dutch shares in withholding tax revenue loss of selected countries (> 5%) – dividend

	WLD	BGD	EGY	ETH	DEU	IDN	NLD	UGA	ZMB
Base	9.1		16.4	16.2	3.8	58.2		100.0	
GAAR	8.6								

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