

Tilburg University

Limitation of Holding Structures for Intra-EU Dividends: Limitation of Holding Structures for Intra-EU Dividends

Barentzen, Susi; Lejour, Arjan; van 't Riet, Maarten

Publication date:
2019

Document Version
Publisher's PDF, also known as Version of record

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):

Barentzen, S., Lejour, A., & van 't Riet, M. (2019). *Limitation of Holding Structures for Intra-EU Dividends: Limitation of Holding Structures for Intra-EU Dividends: A Blow to Tax Avoidance?* (CPB Discussion Paper; Vol. 406). CPB Netherlands Bureau for Economic Policy Analysis.
<https://www.cpb.nl/sites/default/files/omnidownload/CPB-Discussion-Paper-406-Limitation-of-holding-structures-for-intra-EU-dividends.pdf>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



Limitation of holding structures for intra-EU dividends: A blow to tax avoidance?

Recent rulings from the European Court of Justice in two Danish cases limit the tax benefits related to cross-border dividend payments. This could be the end for certain tax-motivated structures of international companies.

With more countries participating, the combat against tax avoidance is more effective.

CPB Discussion Paper

Susi Hjorth Bærentzen, Arjan Lejour, Maarten van 't Riet

December 2019

Limitation of holding structures for intra-EU dividends: A blow to tax avoidance?

Susi Hjorth Bærentzen¹, Arjan Lejour² and Maarten van 't Riet³

Abstract/Summary

This article analyses the recent rulings from the European Court of Justice in two Danish cases and examines their possible impact on international tax avoidance. These rulings regard limitations of tax benefits related to cross-border dividends and interest payments resulting from the interposition of holding companies in the EU. We conclude that from a legal perspective, the rulings demonstrate the alignment of international tax policies to combat tax avoidance between the EU and the OECD. This alignment is historical in international tax law as it encompasses a record-high number of states and because it introduces a minimum standard of tools to combat tax treaty abuse directly into national state legislation. This could be the end for certain tax-motivated structures of international companies. From a quantitative perspective, the conclusion is that the rulings limit the potential for Multinational Enterprises to lower their tax burden considerably. The worldwide average potential gain from treaty shopping is reduced by 1.1 percentage points from 5.6% to 4.5% when the EU member states cannot be used on treaty shopping routes. With more countries, and treaties, involved, the combat against tax avoidance is more effective. However, the fact that some countries have a standard withholding tax rate of zero percent hampers the combat. If a prohibitive penalty is applied on indirect routes to all partner countries, the policy is much more effective. The gains from treaty shopping all but disappear in such a setting.

JEL codes: H25, H26, H32, F23

Key words: tax avoidance, withholding taxes, treaty shopping, network analysis

¹ PwC Copenhagen, Aalborg University

² CPB Netherlands Bureau for Economic Policy Analysis, University of Tilburg

³ CPB Netherlands Bureau for Economic Policy Analysis, University of Leiden

The authors thank Marcel Lever (CPB), Henk Vording (University of Leiden) and Stef van Weeghel (PwC, University of Amsterdam) for their support, comments, suggestions and discussion. The authors alone are responsible for the opinions in the article, any possible errors and/or lack of clarity. This article is written with the intention that it would be accessible to both an economic and a legal audience.

List of acronyms

ATAD	Anti-Tax Avoidance Directive
BEPS	Base Erosion and Profit Shifting
CJEU	Court of Justice of the European Union
CPB	Netherlands Bureau for Economic Policy Analysis
CTA	Compliant Tax Agreement
DTT	Double Tax Treaty
GAAR	General Anti-Avoidance Rule
IBFD	International Bureau of Fiscal Documentation
IRD	Interest and Royalties Directive
LOB	Limitation of Benefits
MLI	Multilateral Instrument
MNE	Multinational Enterprise
OECD	Organisation for Economic Co-operation and Development
OECD MC	OECD Model Tax Convention on Income and Capital
PSD	Parent-Subsidiary Directive
PPT	Principal Purpose Test
WHT	Withholding tax

1 Introduction

Several international initiatives aim to combat tax evasion and avoidance. Recently, the playing field changed considerably with two preliminary rulings, dated 26 February 2019, from the Court of Justice of the European Union (hereafter the “CJEU”). These rulings caused considerable turmoil in the world of international fiscal advisory practice. We argue that these rulings are a game-changer in tax-motivated structuring of international groups.

The rulings, in the so-called “Danish beneficial ownership cases” (hereafter “the Danish BO cases”), regarded the exemption of withholding taxes based on the Parent-Subsidiary Directive (hereafter the “PSD”) and the Interest and Royalty Directive (hereafter the “IRD”) in abusive situations. These EU directives allow for the tax-free distribution of dividends, royalties or interest between two EU member states when certain conditions are met. The Danish tax authorities argued in the cases that the directives did not apply, and the tax exemption was denied because the relevant payments eventually ended up in third, non-EU countries, rendering the interposed EU holding companies mere conduits. The cases were referred by the Danish national courts to the CJEU with a request for a preliminary ruling to establish the interpretation of the EU law in order for the national courts to make the correct decision in the end.

The rulings represent a landmark in the combat against tax avoidance in EU law⁴, as they provide guidelines for estimating situations of abuse, in which the advantages of the PSD and the IRD should be disallowed. This inspired us to address two research questions in this article. The first has a legal perspective: Can the direction of the rulings be understood or even defended having regard to the recent development in international tax policies in the EU and the OECD? And if so, where is the line drawn by the cases to disentangle abusive behaviour from valid economic activity eligible for the advantages in EU tax law? This distinction implies an economic test determining whether the tax benefits for the taxpayers are sufficiently outweighed by other business benefits for them in a given arrangement.⁵

We conclude that the rulings represent a clear alignment of the policies to combat tax avoidance within the EU and the OECD. Furthermore, the rulings provide some guidelines to disentangle abusive behaviour from valid economic activity eligible for advantages according to EU directives and DTTs, which is also an indication of the worldwide impact of the rulings. It is clear that the economic test conducted to draw this line both affects the overall potential for treaty shopping, as it is envisaged in the OECD BEPS project, and for abusive behaviour, as it is envisaged in EU tax law, since it is based on factual patterns found in the Danish beneficial ownership cases.

The second question has a quantitative perspective: Assuming such a test, can it be extended to provide a possible measure of the impact of the rulings on a larger scale than the cases alone? And if so, what will the impact be? For this assessment, we use the network analysis developed by van ‘t

⁴ See also J. Schwarz: *Beneficial Ownership: CJEU Landmark Ruling*, <http://kluwertaxblog.com/2019/02/27/beneficial-ownership-cjeu-landmark-ruling/>

⁵ See also D. Bradbury, T. Hanappi and A. Moore, *Estimating the fiscal effects of base erosion and profit shifting: data availability and analytical issues*, UNCTAD Special Issue on Investment and International Taxation, Volume 25, Number 2, 2018, p. 98

Riet and Lejour (2018).⁶ With the network method, we can determine the ‘cheapest’ tax routes for dividend flows between 108 countries. Quite often, these are indirect routes via other (conduit) countries. We compute the maximum possible tax reduction that can be achieved by choosing the optimal routes over the network. In addition, we establish which countries are most central in the tax network, and hence, are most likely to perform the role of a conduit country. With a scenario analysis, we explore how these routes change if treaty shopping via Denmark is not possible any longer, i.e. if it had adopted an unilateral policy; what is the impact on the tax burden and the dividend flows via Denmark? Next, we analyse how the dividend flows are affected if the outcome of the cases is applied to the whole EU and also to all countries in the Inclusive Framework of the OECD BEPS project.

The network analysis models the tax-optimising behaviour of Multinational Enterprises (hereafter "MNEs")⁷. However, the full potential of tax reduction is limited by legal rules. These rules are formulated in the OECD/G20 Base Erosion and Profit Shifting (hereafter "BEPS") project to set up an international framework to combat tax avoidance by MNEs, and the EU Anti-Tax Avoidance Directive laying down rules against tax avoidance practices that directly affect the functioning of the internal market. The rulings (also "outcomes") in the Danish cases are an example of the alignment of these two policies to combat tax avoidance, and further limit the possibilities for MNEs to optimise their tax structuring worldwide.

We find that the rulings could limit the potential gains for MNEs to optimise their tax behaviour considerably. The worldwide average gain from treaty shopping is reduced by 1.1 percentage points from 5.6% to 4.5% when the EU member states apply their standard rates of the withholding taxes on indirect routes. When the compliant tax agreements of the Members of the Inclusive Framework on the OECD's BEPS project also apply these standard rates, the treaty shopping gains are reduced by 1.4 percentage points. So the impact is sizeable, but only of significance if more countries apply the standard tax rates on outgoing dividends on indirect routes. If we only apply the outcomes of the Danish BO cases on Denmark itself, the position of Denmark as a conduit country on indirect routes is heavily affected. However, there are ample opportunities for using other indirect routes so that on average the treaty shopping gains do not diminish.

In order to effectively combat treaty shopping, many countries have to implement the standard withholding tax rates, but this is not sufficient for eliminating treaty shopping. There are two reasons for this result. First, several countries have a zero withholding tax on dividends. In our sample of 108 countries, we count 30 countries. If the EU countries apply a prohibitive penalty (also referred to as "p.p.") instead of standard withholding tax rates, the gains of treaty shopping are reduced by 1.5 percentage points compared to the baseline. For this purpose, "prohibitive" implies that the cost of using a certain country-country link as part of an indirect route is so high that it is effectively blocked for use on indirect routes. The difference with the standard withholding tax rates is that also links with a zero or low standard tax rate are no longer used on treaty shopping routes. However, also in

⁶ M. van't Riet, and A. Lejour, 2018, Optimal Tax Routing: Network Analysis of FDI diversion, *International Tax and Public Finance*, October 2018, Vol. 25:5, pp. 1321 – 1371.

⁷ Whereas much of the discussion will apply to 'taxpayers' in general, i.e. to individuals and all legal persons, the network analysis concerns MNEs in particular as the bilateral treaty rates that are used are those for qualifying companies. The limitations to tax abuse following the rulings in the Danish cases apply in principle to all taxpayers and not just MNEs, but for the purpose of this paper, reference is made to the MNEs in particular.

this setting, the gains from treaty shopping are still sizable. They disappear if all OECD countries were to introduce the prohibitive penalty to all partner countries in the tax network; then treaty shopping becomes nearly non-existent.

The OECD/G20 BEPS project is an important initiative in the combat of international tax avoidance, including Action 6, Preventing the Granting of Treaty Benefits in Inappropriate Circumstances.⁸ New OECD initiatives involve proposals for taxing the digitalized economy and a Global Anti-Base Erosion Proposal (“Globe”).⁹ This study re-emphasizes the inclusion of as many countries as possible to combat tax avoidance effectively.

In the rest of the article, we first set out how we use the term ‘treaty shopping’ and we briefly discuss an economic perspective on withholding taxes. We present the two Danish cases involving the distribution of dividends in section 3,¹⁰ we discuss the outcomes of both cases, their history and contents. The rulings amount to an abuse test, weighing the tax benefits against other business benefits. Section 4 describes its characteristics and compares the outcomes with the rules in EU’s ATAD GAAR and the OECD Multilateral Convention. In section 4, also the tax benefits related to the two particular cases are estimated. The second part of the article emphasises the impact of the outcomes of these cases assuming they can be generalised. Section 5 describes our analytical tool, the network analysis. Section 6 presents the results of various scenarios and section 7 concludes.

2 Treaty shopping and withholding taxes

In the first part of the article, we discuss the legal arguments to determine whether certain holding structures constitute abusive situations in which, subsequently, treaty benefits must be denied. In the second, quantitative, part of the article, we examine the potential tax benefits for dividend distributions that may be obtained, worldwide, by treaty shopping. The term “treaty shopping” is used in the neutral sense of indirect routing. “Treaty shopping” thus is not to be understood as “treaty abuse” as the term “treaty shopping” for the purpose of this article is defined purely as “an attempt by a person to indirectly access the benefits of a tax agreement between two jurisdictions without being a resident of one of those jurisdictions”.¹¹ This is more or less in line with the definition of van Weeghel (1998) as something that denotes “a situation in which a person who is not entitled to the benefits of a tax treaty makes use – in the widest meaning of the word – of an individual or legal person in order to obtain those treaty benefits that are not available directly.” If the said person had been a resident of one of the treaty jurisdictions, the treaty benefits would automatically apply.

Double Tax Treaties aim to avoid or at least reduce double taxation. Tax treaty shopping is a method of paying less withholding taxes, making use of the lower agreed rates in the treaty instead of the higher standard rates. This may be financially and economically advantageous, not only for the individual or firm, but also for a jurisdiction. A lower tax burden increases profits and the return on

⁸ [OECD, 2015 Preventing the Granting of treaty Benefits in Inappropriate Circumstances, Action 6: 2015 Final report.](#)

⁹ [OECD, 2019, Public Consultation Document.](#): Global Anti-Base Erosion Proposal (“GloBE”) -Pillar Two.

¹⁰ The restriction to the dividend cases is because the network analysis, was only operational for dividend flows at the time.

¹¹ For a thorough discussion of the different aspects of treaty shopping, see S. van Weeghel: *The Improper Use of Tax Treaties*, Kluwer, 1998.

capital and could stimulate more investment and even employment. These economic effects have to be compared with other economic effects, such as higher, more distortive taxes on other tax bases. Withholding taxes on dividends determine, together with the corporate tax rate, the tax burden on capital income of shareholders. Although, ideally, this income would be taxed at the shareholder level, it is often taxed at the source. In most jurisdictions, the combined CIT and dividend tax burden is smaller than the tax burden on labour, but the differences are not that large. The lower tax burden on capital income follows from the more distortive nature of capital income taxation compared to labour income taxation due to its mobility.¹² However, large differences between both tax burdens could create incentives for labelling labour income as capital income at the enterprise level, which is not efficient in the absence of such tax differences.

So, there are a number of economic reasons that capital income should be sufficiently taxed, apart from the revenue motive in the source state¹³ including a withholding tax on dividends. In addition, the opportunities for avoiding withholding taxes seem to be larger for large multinational firms than for smaller firms, due to the associated costs and required expertise for treaty shopping. This could reduce the growth possibilities for smaller firms, and therefore hamper economic growth.

There are also other factors in favour of withholding taxes. They are taxes on capital income and avoidance could have redistributive consequences which may not be in line with the societal preferences on redistribution. Finally, reducing double taxation may lead to double non-taxation, which, apart from the loss of revenues and distributional consequences, may affect the tax morale of the general public. Judging from the sometimes fierce responses to the recent media coverage and reports on tax avoidance of large firms and also tax evasion, it seems to be a very sensitive topic¹⁴.

¹² OECD, 2010, Tax Policy Study No. 20 - Tax Policy Reform and Economic Growth, Annex B.

¹³ For a comprehensive overview of all efficiency and equity arguments for taxing capital income, see Jacobs, Bas, 2013, From Optimal Tax Theory to Applied Tax Policy", FinanzArchiv, 69, (3), 338-389.

¹⁴ For a thorough analysis of the impact of this coverage, see S. Douma: *Miscommunication and Distrust in the International Tax Debate*, Wolters Kluwer, August 2018 and European Commission: Summary Record of the Meeting of the Platform for Tax Good Governance, Brussels, 12 September 2018.

3 The cases

The rulings in the Danish BO cases provide a new means of combatting tax avoidance for the EU member states by denying tax benefits in abusive situations. Furthermore, the rulings provide guidelines on how to disentangle abuse from real economic activity in practice, as the following sections will demonstrate.

3.1 The outcome of the cases

Originally, the cases were brought before the CJEU on 19 February 2016 by the High Courts of Denmark for a preliminary ruling. Almost two years later on 1 March 2018, the Advocate General¹⁵ designated to the cases, AG Kokott, gave her opinion¹⁶, and almost three years later on 26 February 2019, the CJEU handed down the preliminary rulings. The CJEU heard the cases in October 2017 when the Court sat with 15 judges presided by the Court's president. The fact that their composition went on beyond the change of judges at the CJEU in November 2018 speaks of the complexity and significance of the cases.¹⁷

Moreover, given that the CJEU decided to provide a very different outcome than AG Kokott in her opinion from 2018, it is understandable that the outcome has been met with surprise and with a certain degree of scepticism¹⁸. If the CJEU had followed the opinion of AG Kokott in early 2018, the outcome of the cases would have been very different as she opined that the CJEU should maintain a hard line concerning the member states' possibilities to deny benefits otherwise available in EU direct tax law. In other words: the outcome would have largely been in favour of the taxpayers¹⁹, whereas the final outcome instead provided the member states with a very potent weapon to fight certain legal business structures intended to obtain tax benefits. Consequently, the surprise factor has been significant and the outcry prompt, especially from tax advisers and academics²⁰, and even the media has covered the cases and speculated that they could be a bomb for countries like the Netherlands, which has a history of hosting the conduit companies²¹ that enable the beneficial structures²².

For the purpose of answering the first research question, the following sections will analyse the cases in the light of recent developments in international tax policies within the EU and the OECD.

¹⁵ The CJEU consists of a judge from each of the EU member states and 11 advocates general (AG). The role of the AG is to propose an independent legal solution in the form of an "opinion". The CJEU is not obligated to follow the opinion delivered by the AG, but the opinion has an impact on the decision and is often followed.

¹⁶ For a thorough analysis of AG Kokott's opinion in the cases, see S. Baerentzen: *Cross-Border Dividend and Interest Payments and Holding Companies – An Analysis of Advocate General Kokott's Opinions in the Danish Beneficial Ownership Cases*, European Taxation, August 2018, p. 343-353.

¹⁷ See also, S. Baerentzen: *Danish cases on the use of holding companies for cross-border dividends and interest – A new test to disentangle abuse from real economic activity?* (forthcoming – under peer review)

¹⁸ See e.g. W. Haslehner & G. Kofler: *Three observations on the Danish Beneficial Ownership Cases* <http://kluwertaxblog.com/2019/03/13/three-observations-on-the-danish-beneficial-ownership-cases/>

¹⁹ The taxpayers being the Multinational Enterprises (MNEs) setting up these holding structures.

²⁰ Op. cit. notes 5 and 15.

²¹ "Conduit companies" is used as a description for an interposed company that enables benefits from an EU directive or a DTT. It does not make reference to abusive behaviour or conduct.

²² See A. Lejour, J. Möhlmann and M. van 't Riet: *Conduit country the Netherlands in the spotlight*, CPB Policy brief 2019/01.

3.2 The history of the cases

The issues relating to the Danish beneficial ownership cases go all the way back to the late 1990s/early 2000s when Denmark was an attractive jurisdiction for establishing holding companies. The reason was that back then Denmark did not levy any withholding tax on dividends paid to parent companies, regardless of residence. This policy was criticised by the EU for being unfair tax competition²³, and in 2001 a condition that the withholding tax had to be lowered according to the PSD or a Double Tax Treaty (hereafter “DTT”) was added to the domestic rules as a requirement for the exemption to withhold the taxes. So, if the withholding tax on dividends was to be lowered for the foreign companies with limited tax liability to Denmark according to a DTT or the PSD, no WHT applied at all according to the national Danish rules. By the late 2000s, national political attention turned towards a number of large Danish companies that had been acquired by private equity funds under highly leveraged structures, resulting in a potential decrease in corporate income tax from these companies, at least from a theoretical point of view. Consequently, the Danish tax authorities launched a project to investigate seven specific acquisitions in order to determine whether they were compliant, inter alia, in terms of withholding taxes on dividends.

The core of the cases was that Denmark had not implemented any measures by statutory law to combat abuse in relation to benefits from the PSD. The question was whether there was a basis for the Danish Ministry of Taxation to maintain that a taxation at source should have been levied because the recipients of the dividends or interest were in fact not the “beneficial owners”, which was a requirement according to the DTTs and the IRD (but not the PSD), thus allowing Danish tax authorities to deny the benefit to pay dividends without withholding tax at source.

The two cases on withholding tax on dividends distributed by Danish companies to foreign companies were reviewed collectively by the CJEU under the file numbers C-116/16²⁴ and C-117/16²⁵ and the final decision was published as C-116/16. For the purpose of the forthcoming analysis, a brief description of the cases and the facts will be provided below.

3.3 The case C-116/16 – T Denmark

T Denmark is a Danish listed service-providing company, in which more than 50% of the shares were held by N Luxembourg II. The remaining shares were owned by thousands of shareholders. N Luxembourg II was a company in Luxembourg incorporated by N Luxembourg in 2009. N Luxembourg held the majority of the capital; the remaining capital (less than 1%) was held by N Luxembourg III, i.e. indirectly by N Luxembourg. N Luxembourg was owned mainly by private equity funds, which are typically made up of a range of limited partnerships in non-EU member states with whom Denmark has no tax treaties, the Cayman Islands in this case. In 2010, N Luxembourg II acquired a large number of shares in the Danish company T Denmark. The vast majority of the dividends from T Denmark to N Luxembourg II were to be paid up the chain to the owners of N Luxembourg II (N Luxembourg and N Luxembourg III).

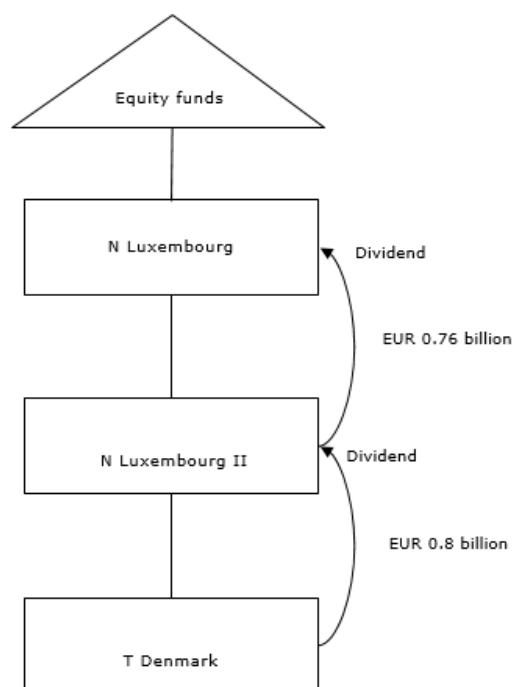
²³ Working Group Report SN 4901/99 from 23 November 1999 from the ECOFIN Code of Conduct Group.

²⁴ DK: ECJ, Case C-116/16 Skatteministeriet v T Danmark.

²⁵ DK: ECJ, Case C-117/16, Skatteministeriet (The Danish Ministry of Taxation, Denmark) v. Y Denmark ApS.

Furthermore, the vast majority of the dividends from N Luxembourg II to N Luxembourg III were to be paid up the chain as dividends to N Luxembourg III's owners (N Luxembourg) and subsequently paid up the chain to companies controlled by the equity funds or by N Luxembourg's creditors. A small percentage of the dividends (3%-5%) was to be used by N Luxembourg, N Luxembourg II and N Luxembourg III to cover certain costs or to be allocated to a reserve for future costs.

Figure 1: Dividend case I



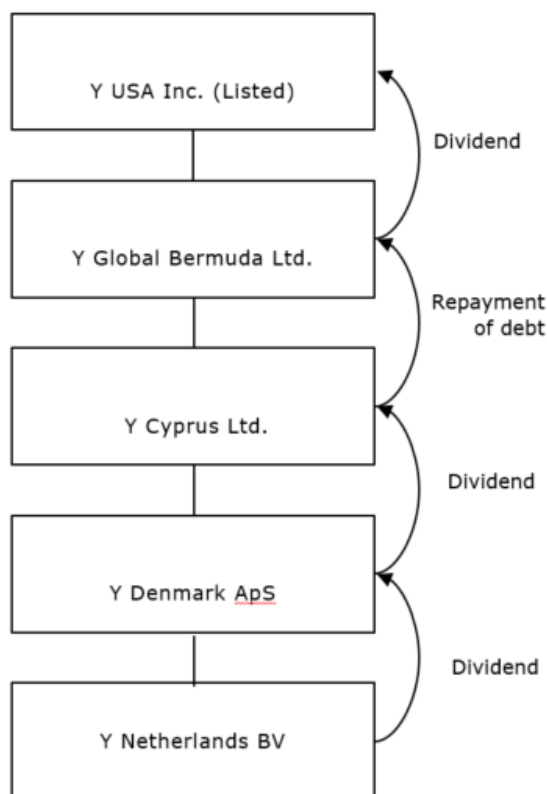
The Danish Ministry of Taxation held that the Luxemburg entities had been interposed in order to obtain a tax advantage and that the distributed dividends were not intended to be used by these entities, rendering them mere conduits and not the “beneficial owners” of the dividends. In order to be exempted from the obligation to withhold taxes at source on the dividends distributed, the tax needed to be lowered/waived according to the PSD or a DTT. The Ministry argued that the tax should not be waived according to the PSD because this would be contrary to the general anti-abuse principle of EU law, and that the lowering of the tax according to the DTT did not apply because the beneficial ownership requirement was not fulfilled. The reasoning for both arguments was that the Luxemburg entities had simply been interposed to obtain a tax advantage, and that no other valid business reason could be found for their existence.

3.4 Case C-117/16 – Y Denmark ApS

The case concerns a Danish subsidiary (Y Denmark ApS) distributing dividends to its Cyprus parent (Y Cyprus), which was granted a loan by its Bermuda shareholder (Y Bermuda) and used the dividends received to repay this loan. The loan was originally intended to be used in the acquisition of Y Denmark. Y Cyprus's only activity was being a traditional holding company of Y Denmark. It had no office or staff. After its incorporation in 2000, Y Denmark acquired the shares in the company Y Netherlands by way of a group contribution from Bermuda Ltd. This was done to minimise tax as there would be no withholding tax on a distribution of dividends.

Until September 2005, Y Bermuda owned Y Denmark. The global ultimate owner of the group structure was Y USA, which was a listed US corporation. In September 2005, Y Bermuda incorporated Y Cyprus and this company was interposed between Y Denmark and the previous global ultimate parent company in Bermuda by way of an intra-group restructuring.

Figure 2: Dividend case II



The price for the acquisition was EUR 90 million and, following the acquisition, Y Denmark sold the shares in Y Netherlands to an affiliated Netherlands company. The shares were sold at a price of EUR 14 million and Y Denmark recorded a receivable for the sale price from Y Netherlands. In September 2005, Y Denmark distributed dividends equivalent to EUR 75 million to Y Cyprus, and these dividends were used to pay off the receivable of Bermuda Ltd. In October 2006, Y Denmark declared another dividend distribution to Y Cyprus of EUR 12 million. Like the first dividends distributed, these later dividends were also passed on to Y Bermuda.

Similarly to case 116/16, the Danish Ministry of Taxation held that the Cyprus entity had been interposed in order to obtain a tax advantage and that the distributed dividends were not intended to be used by this entity, rendering it a mere conduit and not the “beneficial owner” of the dividends. Consequently, the Ministry argued that the dividends should be regarded as if they had been paid directly to Y Bermuda and that neither the PSD nor the Denmark-Cyprus DTT would apply to lower the withholding tax rate. The fact that the dividend was redistributed all the way to Y USA and that the Danish-US DTT could potentially apply did not influence the end-result according to the Ministry as the Ministry considered that the Cyprus entity had been interposed in order to obtain a

tax advantage and could find no other valid business reasons for its existence; i.e. the Ministry considered the entire structure abusive and concluded that tax at source should have been withheld.

3.5 Alignment between the EU and the OECD

As described above in sections 3.3. and 3.4, the outcome of the Danish BO cases has provided the EU member states and their tax administrations with a strong remedy to combat tax avoidance in the form of an abuse test to apply in order to disregard certain beneficial structures.

To draw the contours of this abuse test, common elements can be retrieved from the cases which also represent common denominators in the plans to combat tax avoidance from both the EU and the Organisation for Economic Cooperation and Development (OECD). Consequently, the intermediate conclusion here is that the rulings stand as an example of the alignment between the EU and the OECD in combatting tax avoidance²⁶. This alignment is significant because it is the most comprehensive cooperation between the EU and the OECD in the combat against tax avoidance so far. This cooperation is backed by the rules in ATAD and BEPS providing a minimum of streamlining between the member states' combat against abuse, which are transposed directly into their national legislation. This makes way for a new international order to influence their combat against tax avoidance, and at the same time it creates uncertainty about the interpretation of the rules. While the rulings of the CJEU are not directly binding for the OECD network, the rulings in the Danish cases still provide insight into how abusive situations are to be determined in the tax world post ATAD and BEPS. The characteristics of the abuse test will be dealt with in section 4.

²⁶ See also, S. Baerentzen: *Danish cases on the use of holding companies for cross-border dividends and interest – A new test to disentangle abuse from real economic activity?* (forthcoming - under peer review)

4 Weighing the tax benefits against other business benefits

The two examples from the dividend cases described in section 3 present a picture of a common way of structuring multinational groups to gain tax advantages. This kind of structures have been used for many years and are still used, e.g. for acquisitions. The question remains whether they are still attractive following the outcome of the Danish beneficial ownership cases.

As mentioned in the introduction, one of the main outcomes of the cases was that a general anti-avoidance principle exists in EU direct tax law and that member states are not just allowed, but even obliged, to deny any benefit arising from abusive behaviour²⁷. So when is enough “enough”? When is a structure sufficiently artificial to constitute an abusive situation and oblige the member state to disallow any advantages that e.g. the PSD may provide?

The CJEU does not provide a detailed answer to this; however, in assessing a structure as potentially being abusive, it is first of all up to the tax administration (i.e. the member state) to demonstrate the presence of 1) the subjective element of the abuse test and 2) the objective element of the test, see below.

EU member states are obliged to deny any benefit arising from the abusive behaviour. In the case of distribution of dividends, however, it is not only the PSD that provides for a potential reduction of the WHT, as a bilateral DTT between two member states can also provide a reduction. For the purpose of estimating the potential impact of the denial of directive benefits as a consequence of the Danish BO cases, it is necessary to consider reducing the WHT by an intra-EU DTT. It is assumed that such a possibility would undermine the effectiveness of the general anti-avoidance principle and hinder its coherent application. This is further substantiated by the principle of sincere cooperation in Article 4(3) of the Treaty on European Union, which determines that member states shall refrain from any measure which would jeopardise the attainment of the European Union’s objectives. If member states could circumvent the obligation to deny treaty benefits in abusive situations by way of a DTT, this would hinder the European Union’s objectives and would be incompatible with the principle of sincere cooperation.²⁸ For the purpose of this, it is assumed that the benefits according to a DTT between two EU member states are to be denied in case of abuse, similarly to the obligation to deny the benefits according to the PSD, as an alternative interpretation would undermine the obligation to deny benefits in abusive situations according to the general EU anti-avoidance principle and the principle of sincere cooperation²⁹. Finally, considering that the outcome of the cases gives a clear indication of the alignment between the EU and the OECD in combatting tax avoidance, it would appear to be counterproductive if there was indeed still an opportunity for taxpayers to achieve benefits in abusive situations by relying on a DTT between two member states.

²⁷ For a thorough analysis of the legal aspects of the outcome of the cases, see S. Baerentzen, *op. cit.* note 14

²⁸ This questions has also been raised by MP Bart Snels in a number of questions for Menno Snel, the Dutch State Secretary of Finance: <https://www.tweedekamer.nl/kamerstukken/kamervragen/detail?id=2019Z09124&did=2019D25250>. The reply given to question 11 regarding this issue is contrary to our presumption here.

²⁹ See also I. De Groot: *Aan doorstroomvennootschap betaald dividend: Misbruik van recht*, NLFiscaal 0597 (2019), p. 3-4, L.C. van Hulten, & J.J.A.M. Korving: *Svig og Misbrug: The Danish Anti-Abuse Cases*, Intertax Vol 47, 2019, p. 799-798. For a similar argumentation regarding the PSD, see Weber, Dennis: *The New Common Minimum Anti-Abuse Rule in the EU Parent-Subsidiary Directive: Background, Impact, Application, Purpose and Effects*, Intertax, Issue 44/2, 2016, p. 104 ff.

4.1 Disentangling abusive behaviour from valid business decisions

The abuse assessment described above is the linchpin in both Danish BO cases on dividends. It is also found in the latest addition to the measures to combat tax avoidance in the EU, i.e. the ATAD, which was introduced on 1 January 2019. In several aspects, ATAD carries out some of the action points of the OECD Base Erosion and Profit Shifting project (hereafter “BEPS”), and one of the examples of this can be found in the minimum requirement that member states have to implement a general anti-avoidance rule (hereafter “GAAR”) which provides a clear legal basis for member states to disallow advantages from EU law or from Double Tax Treaties (hereafter “DDT”s).

The wordings of the two general anti-avoidance measures are different, but overall the assessment is the same in the sense that they provide for an abuse test to be done based on a subjective and an objective element. This test allows the tax administrations to disregard e.g. conduit companies and, consequently, the benefits that their interposition entails.

The GAAR in ATAD (Article 6) reads as follows:

1. For the purposes of calculating the corporate tax liability, a Member State shall ignore an arrangement or a series of arrangements which, having been put into place for the main purpose or one of the main purposes of obtaining a tax advantage that defeats the object or purpose of the applicable tax law, are not genuine having regard to all relevant facts and circumstances. An arrangement may comprise more than one step or part.

2. For the purposes of paragraph 1, an arrangement or a series thereof shall be regarded as non-genuine to the extent that they are not put into place for valid commercial reasons which reflect economic reality.

3. Where arrangements or a series thereof are ignored in accordance with paragraph 1, the tax liability shall be calculated in accordance with national law. “ (our underlining)

In the OECD’s BEPS project, this rule is a so-called “principal purpose test”, which was implemented by the Multilateral Convention (hereafter the “MLI”) and the 2017 commentary to the OECD Model Convention (hereafter the “2017 MC”). Similarly to the ATAD GAAR, it provides member states with a legal basis to disregard certain structures put in place to obtain a tax advantage contrary to the object and purpose of the DTT. It reads as follows:

“Article 7 Prevention of Treaty Abuse

1. Notwithstanding any provisions of a Covered Tax Agreement, a benefit under the Covered Tax Agreement shall not be granted in respect of an item of income or capital if it is reasonable to conclude, having regard to all relevant facts and circumstances, that obtaining that benefit was one of the principal purposes of any arrangement or transaction that resulted directly or indirectly in that benefit, unless it is established that granting that benefit in these circumstances would be in accordance with the object and purpose of the relevant provisions of the Covered Tax Agreement. “ (our underlining)

The objective element of the abuse test

The so-called “objective” element of the abuse test is simply a test to establish whether granting the desired benefit would be contrary to the object and purpose of the DTT or e.g. the PSD. What exactly constitutes the object and purpose of a relevant DTT or EU directive has been the subject of

numerous academic works³⁰, but post ATAD and BEPS, the intended object and purpose include a provision to combat tax avoidance. In other words, the object and purpose are no longer merely to enable the distribution of dividends between EU member states / DTT signing states, it is also to ensure the limitations to these distributions.

The subjective element of the abuse test

For the purpose of this article, the “subjective” element is solely defined as the balancing act in the taxpayer’s decision to move forward with a certain structure or transaction between, on the one hand, obtaining a tax benefit and, on the other hand, other business reasons. There may be several business reasons for interposing a holding company, e.g. due to corporate law requirement, as a means of creating the adequate control structure within the group or as a requirements for a financing structure, just to list a few. While it is likely that there are non-tax business reasons for interposing a holding company in most structures, if the main/principal purpose or one of them is to obtain a tax benefit, then the subjective element can still be fulfilled if the structure is not in accordance with the overall business reality of the group. Initially, it is for the tax administration to demonstrate that the subjective and objective elements exist (Para 116 in case C-116/16).

If both elements exist, the onus of the burden of proof shifts from the tax administration to the taxpayer who has to demonstrate other valid business reasons for the transaction/structure and prove that these other reasons outweigh the tax reasons. The subjective test is merely considered as weighing the tax and non-tax elements in a transaction and disallowing the result if the tax elements are sufficiently large³¹.

4.2 The indications of abusive situations

After the CJEU handed down its preliminary rulings, the cases have now been referred back to the Danish High Courts which are left with the somewhat ungrateful task of assessing each case with its unique fact pattern in light of the CJEU rulings. The assessment made by the Courts is whether the specific situations constitute abuse and, consequently, whether no benefit should have been obtained and tax at source should have been withheld. Presumably, the cases will continue to the Danish Supreme Court no matter if the outcome is in favour of the taxpayer (MNE) or the tax administration/Denmark simply due to the very large potential taxable amounts in the six cases. This means that it is likely to take several years yet until the cases are finally decided at a national level.

The CJEU has not rendered the national courts completely empty-handed in the abuse assessment as it has in fact provided six specific indications that point in the direction of an abusive situation, if they are present. This attention to both the details and the facts of the cases is quite remarkable for CJEU rulings as it is for the national courts to decide on the specific facts and final outcome of the cases. What is perhaps even more remarkable is the fact that large parts of the argumentation by the CJEU in relation to abusive situations appears to be lifted nearly verbatim from the argumentation of the Danish Ministry of Taxation in the cases before the national courts³². By

³⁰ See e.g. S. van Weeghel: *A Deconstruction of the Principal Purpose Test*, World Tax Journal, 2019, 11(1) and D. Robert: *Treaty Abuse in the Post-BEPS World: Analysis of the Policy Shift and Impact of the Principal Purpose Test for MNE Groups*, Bulletin for International Taxation, January 2019, IBFD.

³¹ See also S. Baerentzen, op. cit. note 14 for a thorough discussion of this topic.

³² See Baerentzen, op cit note 14.

relying heavily on the argumentation of the tax administration in these cases, the CJEU has essentially given the seal of approval to large parts of the specific argumentation from the Danish Ministry of Taxation over the years. This peculiar circumstance makes the final outcome of the ruling even more important.

The indications that a structure is sufficiently artificial to constitute abuse are as follows:

- 1) If the group structure has been put in place to obtain a tax advantage (Para 100 in Case C-116/16);
- 2) If all of/almost all of the dividends are redistributed up the structure shortly after being received (Para 101 in Case C-116/16);
- 3) If the interposed holding company has an insignificant income due to the redistribution of the dividends (Para 103 in case C-116/16);
- 4) If the sole activity of the holding company is to redistribute the dividends based on the lack of management, balance sheets, expenses, employees and office facilities (Para 104 in case C-116/16);
- 5) If the contractual obligations (both legal and actual) render the holding company unable to enjoy and use the dividend (Para 105 in case C-116/16);
- 6) If there is a close connection between the establishment of complex financial transactions and structures and new tax legislation (Para 106 in case C-116/16).

Given the nature of the questions concerned in the rulings and given the high level of uncertainty they have entailed, it seems beneficial for the national courts to at least have some guidelines as to the interpretation of “abusive situations” going forward. At the same time, the indications provide a limitation to many of the existing private equity structures of today. These limitations are not of a legal nature as such, and they are not a direct continuation of CJEU case law in the area of anti-abuse. They do, however, bear some resemblance to certain OECD guidelines on the combat against tax avoidance, and mostly the indications seem to be derived from economic theory rather than legal theory³³.

The likeness between the ATAD GAAR and the BEPS PPT is clear in the sense that both rules are based on an abuse assessment that consists of a subjective and an objective element, as described above. This abuse test is used to disentangle abusive behaviour from valid economic activity eligible for advantages according to EU directives and DTTs. Unravelling these types of behaviour is no easy task, and the CJEU has demonstrated clear alignment with the OECD and BEPS by specifically stating the indications of abusive situations based on well-known factual patterns and basic economic theory rather than by referring to existing EU case law. In other words: instead of referring back to existing EU case law specific for the EU direct tax area, it has provided indications of abuse which can be applied globally as well. This strongly suggests alignment between the EU and the OECD in combatting tax avoidance, cf. section 3.5. If indeed so, the effects of the rulings will go beyond the borders of the EU to the OECD member states.

4.3 Computing the tax benefit of holding structures

The subjective test in determining abuse amounts to a weighing of the tax benefits against other valid business benefits of a holding structure. The description of the cases provides us with the information to compute the first element of the test, the tax benefits.

³³ See Baerentzen, op. cit. note 14.

We consider a stylised version of dividend case I from section 3. We have the entity in Denmark that distributes dividend to a holding company in Luxemburg. No withholding taxes are payable because of the PSD. The holding company is owned by an equity fund residing in the Cayman Islands, which does not have a DTT with Luxemburg, or with Denmark for that matter. After deduction of costs, the holding company in Luxemburg distributes the dividend to the owner, incurring dividend withholding taxation at the standard rate for Luxemburg.

Now as to the amounts. The initial distribution is EUR 800 million.³⁴ The costs of the holding company are taken to be 5% of the initial distribution, equal to EUR 40 million.³⁵ The EUR 760 million distributed to the Cayman Islands is taxed at a rate of 15%, and in principle that results in a tax revenue of EUR 114 million to Luxemburg.³⁶

Next, we compare this tax cost with what would be incurred on the direct route of distribution from Denmark to the owner on the Cayman Islands, i.e. without the interposed holding company in Luxemburg. In that case, the standard withholding tax rate of Denmark, 28% at the time, would apply; a tax burden of EUR 224 million. The difference to the tax burden on the indirect route would be EUR 110 million, but this ignores the costs of the holding company. Deducting these costs results in a tax gain of EUR 70 million. This tax benefit has to be weighed against other business benefits; in many cases, this will be a tall order. Weighing the tax benefits against other business benefits is not limited to weighing solely the amounts as other factors may be relevant, cf. also above under section 4.2. However, for the purpose of this , we use the amounts as an example to illustrate the cases.

The second dividend case involves no less than five jurisdictions. The heart of the matter is a dividend distribution from Denmark to Bermuda, which is not an EU member state. By interposing a holding company in Luxemburg, withholding taxes could be avoided. First of all because of the tax benefit of the PSD for the payment from Denmark to Luxemburg. Next, the income is not taxed in Luxemburg as it applies a dividend participation exemption. And the repayment of debt from Luxemburg to Bermuda is not taxed in either country. Two dividend distributions in 2005 and 2006 amounted to EUR 90 million.³⁷ At a dividend withholding tax rate of 28%, the tax benefit is some EUR 25 million.

³⁴ DKK 6 billion.

³⁵ Although both the percentage and the number may seem very high, they are based on the facts provided by the taxpayer (MNE) in the proceedings before the National Danish Tax Board.

³⁶ This basic calculation does not account for any possible reductions, as these are not the topic of this article.

³⁷ DKK 566 million in 2005 and DKK 92 million in 2006.

5 Network analysis of treaty shopping³⁸

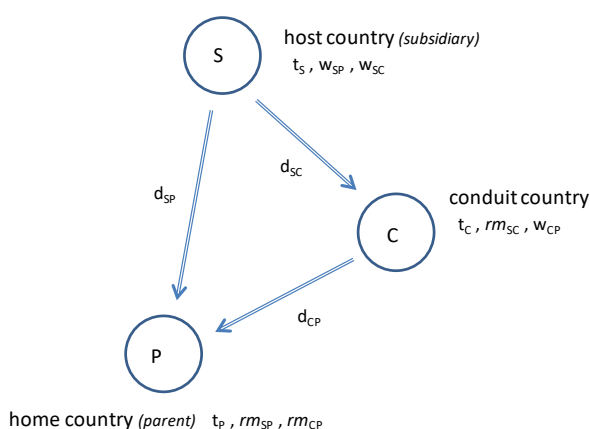
In this second part of the article, we aim to quantify the possible impact of the rulings. The instrument used for this purpose, a network analysis, and the overall methodology are described in this section.

5.1 The network approach and treaty shopping gain

Above, we discussed cases in which the interposition of one or more holding companies in third countries resulted in tax gains for the MNE concerned. The ownership structures make an indirect routing of taxable corporate income possible. The tax gains were defined as the difference between the tax burden incurred on the direct route between the country of origin and destination and the tax incurred on the indirect route using the interposed holding company. The characteristics of the third country selected for accommodating a tax gain were not discussed so far. Could there be another country whose conduit function would lead to a larger gain? Or could a longer chain of holdings in various countries lead to higher tax benefits? Van 't Riet and Lejour (2018) formalise the notion of realising the full potential gain of treaty shopping over a large set of jurisdictions. As discussed in section 2, treaty shopping is used in the neutral sense of indirect routing in this article; no implication of abuse is intended.

The international corporate tax system is considered a transportation network. In the network analysis, 'shortest' paths are computed which minimise the tax payments of MNEs when they repatriate profits. The tax 'distances' between countries are constructed from corporate tax rates, withholding taxes on dividends and double taxation relief methods. Also the reciprocally reduced withholding tax rates in bilateral tax treaties are included. MNEs can reduce the tax burden on repatriated dividends by choosing the 'cheapest' tax route in the network. This may be an indirect route involving a conduit country and treaty shopping. MNEs may take advantage of treaty provisions not found between the ultimate host and home country of their investment. The network approach models this tax-optimising behaviour of MNEs.

Figure 3: Treaty shopping with one conduit country



³⁸ This section is partially based on CPB/OECD (2019, forthcoming).

In a network of 108 countries, and with data from the year 2013, van 't Riet and Lejour (2018)³⁹ conclude that treaty shopping leads to an average potential reduction of the tax burden on repatriated dividends of 6 percentage points. For two thirds of all country pairs in the network, an indirect tax route is cheaper than the direct route. Using a centrality indicator from the network analysis, the most important conduit countries are identified; the United Kingdom, Luxemburg and the Netherlands.

These results are obtained with the set of tax parameters mentioned before, and with an objective method. Moreover, the centrality indicator has been used in regressions as an explanatory variable for explaining the magnitude of bilateral FDI stocks; it proved to be statistically significant in a host of specifications and data selections.⁴⁰ This supports the empirical validity of the method.

5.2 Baseline 2018

The network approach can be used for policy analysis by implementing changes in the tax parameters. A consistent set of such tax changes, and the underlying policy, is referred to as a policy scenario. In a study by CPB/OECD (2019)⁴¹, the network approach is used in an impact analysis of the BEPS Action 6 minimum standards. Not surprisingly, it is found that the higher the number of tax agreements compliant with the minimum standards, such as a principal purpose test (PPT), the larger the impact on the potential for treaty shopping.

The analysis of policy scenarios is most meaningful when based on the most recent information. The network analysis is updated with tax parameters for the year 2018. Most data are obtained from the International Bureau of Fiscal Documentation (IBFD). Some of the collected data are national tax parameters, but the bulk of the data are the bilateral non-resident dividend withholding tax rates from the tax treaties.

The set of parameters includes the 2018 US Tax Reform, which features a reduction of the headline rate of the federal CIT from 35% to 21% and a switch from a so-called worldwide system to a territorial system. The latter implies, by and large, that now repatriated dividends are exempted from taxation in the USA instead of the credit system being applied as double tax relief. The baseline 2018 results are similar to the results when applying the 2013 tax parameters.

The foremost important indicator in our analysis is the tax reduction on repatriated dividends that may be accomplished by treaty shopping. This tax gain is realised when all distributed dividends take the tax-minimising route to the jurisdiction of the parent company. We call this the potential reduction of the dividend repatriation tax rate, or the treaty shopping gain. With this, we assume that the interposed holdings in the conduit country meet nearly all criteria of the indicators mentioned by the CJEU (see section 3.2.). All received dividend flows are sent to other countries. The interposed holding itself does not make any significant profit or can use the received dividends for other purposes. It does also not create other business activities and exists primarily because of the tax advantages.

³⁹ We ignore the Brexit: the United Kingdom was a member of the EU in 2018, and so it is in our baseline.

⁴⁰ See footnote 6.

⁴¹ CPB/OECD, 2019: *Assessing the Impact of the BEPS Action 6 Minimum Standard on Treaty Shopping: A Network Analysis*, OECD Working Paper, forthcoming.

List of some concepts used when referring to the tax network

link	country-country link, the direct bilateral route between two countries, in one direction (the other direction is a distinct link)
covered link	link covered by a specific scenario, i.e. subjected to the treatment of the scenario (e.g. tax penalty when used on an indirect route)
prohibitive penalty	a tax penalty on a covered link that is high enough to effectively block the use of the link on an indirect route
direct route	direct route between two countries, i.e. consisting of a single link
indirect route	indirect route between two countries, i.e. of at least two links, and at least one conduit
optimal route	route between two countries with the lowest repatriation tax possible, the 'cheapest' route, may be a direct route or an indirect route, multiple optimal routes may exist for a given pair of countries

The worldwide average treaty shopping gain in the 2018 baseline is 5.6 percentage points. It reduces the tax burden on repatriated dividends from 9.4% to 3.8% by devising optimal ownership structures. This means that investment is redirected, and the return to the investment follows the diverted route in the opposite direction. The 9.4% tax burden holds when all repatriation is on the direct route between the countries of the subsidiary and the parent company. We find that for two thirds of all country pairs, an indirect route is 'cheaper' than the direct route.

The remaining tax burden of 3.8% consists of the taxation in the host country of the investment (source), the taxation in the home country (residence) and the taxation in the conduit countries; 2.1%, 1.5% and 0.2%. The limited amount of tax revenues generated in the conduit countries is consistent with the fact that the interposed holdings do not have substantial other profitable business activities. For each host country, the average repatriation tax on outgoing dividends can be computed, as can also be done for each home country on incoming dividends. This has been done for direct routes (without treaty shopping) as well as for optimal routes. The difference between them is the treaty shopping gain for the MNEs. Annex A lists these average rates by country as distributor and receiver of dividends for all 108 countries.

Having determined the optimal routes,⁴² we calculate which countries are most often used as intermediate stations on these routes. A so-called network centrality measure is computed which amounts to the diverted dividend flow going through the country. This measure and the ranking of countries are provided in Annex A. The countries most likely to function as a conduit on tax-minimising routes are the United Kingdom (GBR), the Netherlands (NLD) and Sweden (SWE).⁴³ Also ranked high, are Denmark (DNK), 7th, and Luxembourg (LUX), 9th.⁴⁴

⁴² Often there are multiple optimal routes for a given country pair, see Van 't Riet & Lejour (2018), up cit. note 6.

⁴³ Again, this is not directly derived from international statistics, but it results from our modelling exercise.

⁴⁴ Luxembourg is attractive for other tax reasons too. For example, liquidation of a company in Luxembourg is treated as a capital transaction and is not subject to a dividend withholding tax, or, it has a general rate of zero on royalties and interest. Such characteristics have not been taken into account. To avoid arbitrariness we stick to the bare tax parameters. But this may explain the absence of Luxembourg from the top 3 in this analysis.

In general, EU member states rank high on the ranking of network centrality. An important cause is the Parent-Subsidiary Directive of the EU (2003) which, in the qualifying situations that we assume, stipulates intra-EU repatriation rates of zero.

5.3 Scenario analysis: definition and implementation

To examine the possible impact of the CJEU rulings in the BO cases, we perform a so-called scenario analysis. We introduce below five policy scenarios, each involving a different set of tax parameters, and for each of these sets, the network computations are executed, thus answering the question as to what the impact on treaty shopping would be if the policy scenario is put in place. The results will be presented as changes with respect to the baseline 2018, which is the reference scenario.

Table 1: Overview of policy scenarios and their characteristics

	Policy scenario	Implementing countries	Covered links, no.	Tax rate on covered links
1.	<i>Denmark unilateral</i>	Denmark	107	Standard rate
2.	<i>EU-wide</i>	EU and EFTA	3210	Standard rate
3.	<i>Inclusive Framework</i>	BEPS IF	3492	Standard rate
4.	<i>EU-wide (p.p.)</i>	EU and EFTA	3210	Prohibitive penalty
5.	<i>OECD-IF (Strong)</i>	BEPS IF & all OECD	6888	Prohibitive penalty

First, we take the Danish tax authorities as a point of departure. Initially they denied the exemption of the dividend withholding tax from the PSD in a conduit situation involving a third country outside the EU. We imagine, i.e. as a thought experiment, that the Danish tax authorities perceive the rulings of the CJEU as full support and they will deny treaty benefits, including those from the PSD, on all dividend flows leaving Denmark that are part of an indirect route. This means on any route with (an entity in) a jurisdiction before Denmark and on any route with (an entity in) a jurisdiction after the immediate destination of the income payment. Direct dividend repatriation will be left untouched, meaning that here the usual bilateral withholding tax rates apply. This first scenario we dub '*Denmark unilateral (DNK-uni)*'.

Next, we consider the EU as this is, obviously, the jurisdiction of the CJEU. Here, we assume that each Member State will not grant tax privileges in conduit situations, not only when another Member State is the immediate destination of the dividends, but for all other jurisdictions. As before, direct repatriation routes are not affected. We refer to the second scenario as '*EU-wide*'.

The *EU-wide* exercise will be contrasted with the reference situation, which will give a measure of impact. However, this measure may be difficult to interpret, to gauge, without another comparison. For that purpose, we introduce a third scenario from the CPB/OECD (2019) study⁴⁵. Here, it is assumed that all tax agreements between members of the Inclusive Framework on BEPS are fully compliant with the Action 6 minimum standard (the MLI, as mentioned in section 3.2). This comparison makes sense because the PPT proposed under the MLI is a similar economic test determining whether the tax benefits sufficiently outweigh the other business benefits as proposed

by the CJEU. Hence, the *'Inclusive Framework (IF)'* scenario.⁴⁶ This third scenario covers a large number of country-country links subject to intervention.⁴⁷ This is exactly why it may function as a comparison. In the set of 108 jurisdictions, the *IF* scenario covers 3492 country-country links. The *EU-wide* scenario covers $30 \times 107 = 3210$ links.⁴⁸ The *DNK-uni* covers only 107 links, i.e. to all other jurisdictions in the network.

The intervention in the network analysis for the covered links in a scenario is the denying of treaty benefits. This is implemented as follows: we replace the bilateral rate between two countries with the standard rate of the source country.⁴⁹ For the Netherlands, this means a rate of 15% replacing the reduced treaty rates for qualifying situations. For some countries, such as the UK, the standard rate equals zero; denying treaty benefits then is of no consequence to the tax burden using such a link, and these links are therefore clearly candidates for treaty shopping purposes.

Alternatively, we could ensure that the covered links can no longer be used at all for treaty shopping purposes. In this case, we intervene in the network analysis at link level with a prohibitive penalty. This is a tax that comes on top of the existing bilateral withholding tax rate. By adding a large penalty, we have made sure that it completely blocks the specified links for use on indirect routes (and we have verified this).

This rather extreme implementation of denying treaty benefits gives rise to an additional scenario. Instead of the standard rate of the source country, we replace the bilateral rate between two countries with a tax penalty. We do so for all covered links, i.e. including those with source countries with a standard rate of zero. For those countries, the outcomes of both scenarios will differ most. Hence, the scenario with the prohibitive penalty as intervention will yield more impact on the treaty shopping potential. We do this for the *EU-wide* scenario. We refer to this fourth scenario as *'EU-wide prohibitive penalty'*.

Finally, we introduce a fifth scenario in which we combine dealing with countries with a standard rate of zero including even more countries and links. We extend the set of links covered with all bilateral links of all OECD member states that were not already covered in the *IF* scenarios. The covered links are subjected to a prohibitive penalty. We refer to this scenario as *'OECD-IF'*, or *'Strong'* because of its expected impact.

⁴⁶ Also covered are the Compliant Tax Agreements (CTAs) already in force and the CTAs coming into force and already notified under the Multi Lateral Instrument. Moreover, all US tax agreements containing LOB clauses that are supplemented by the United States' domestic anti-conduit regulations are also considered as being agreements that can no longer be used for treaty shopping purposes.

⁴⁷ Beware: the CTAs in the CPB/OECD study are always two-way, while the *DNK-uni* and *EU-wide* scenarios are implemented one way, i.e. on outbound flows.

⁴⁸ *EU-wide* covers the EU27 and Iceland, Norway and Switzerland, which makes the 30 countries. Croatia is not included.

⁴⁹ Alternatively, one may resort to the bilateral treaty of the two EU member states. Earlier, we have argued that this option is not possible.

6 Impact analysis: scenario results

6.1 Scenario 1: *Denmark unilateral*

This scenario covers only the 107 outgoing dividend flows from Denmark, less than 1% (1/108) of the total 11556 links in our network analysis. Not surprisingly, the impact on the worldwide average treaty shopping gain is almost negligible; in the reference scenario, it is 5.60 percentage points, here it is 5.58 percentage points. The worldwide average tax rate after treaty shopping is only 3.79 percentage points.

For Denmark, the effects are non-negligible. To understand the outcomes, we must realise that Denmark ranks relatively high, in 7th place, on the conduit ranking in the baseline. This is due to its dividend participation exemption, its EU membership and its evolved network of bilateral treaties. It has, for instance, a zero dividend withholding tax rate, both ways, with the USA.

Table 2: Top 5 countries with loss and gain in network centrality in Scenario 1: DNK unilateral

DNK-uni	Level	Difference	Ranking	DNK-uni	Level	Difference	Ranking
	Centrality loss				Centrality gain		
DNK		-7.86	89	GBR	15.93	1.13	1
SGP	6.43	-0.13	10	NLD	12.26	1.02	2
MYS	4.99	-0.05	12	SWE	10.78	0.98	3
ISR	2.42	-0.03	27	FIN	9.29	0.82	4
USA	0.57	-0.03	45	EST	9.22	0.28	6

With all of Denmark's outgoing links made more expensive, when used for treaty shopping, Denmark drops in the ranking of network centrality to the 89th position, and it is effectively no longer used for treaty shopping. Compared to this drop, the changes for other conduit countries are negligible. Singapore and Malaysia lose a bit because they are no longer used as conduits on the diversion of dividend flows from Denmark. Some other countries gain in conduit status because Denmark is no longer used as a conduit. The right-hand side of table 2 shows that these countries are mainly the traditional conduits in our network ranking: the United Kingdom, the Netherlands and Sweden.

The average repatriation rate on dividend flows from Denmark is now 6.1%, an increase of 4.3 percentage points.⁵⁰ There is no change at all in the average rate on incoming dividends to Denmark; the optimal tax routes from the other countries are not affected by the tax penalty on flows leaving Denmark. Hence, for the other countries, their average outgoing rates are not changed. Some countries have a modest increase in their average incoming rate due to tax penalty levied on flows from Denmark. See Annex B.1 for results of this scenario at country level.

Table 3 lists the links that lose and gain most in this scenario; it paints a clear picture. The links DNK-USA and DNK-GBR are directly hit by the higher withholding tax rate on the outgoing flows from Denmark for treaty shopping. In the baseline, Denmark is, because of the bilateral zero withholding tax, a conduit country on tax-minimising routes from the USA. With the standard rate of 27% on

⁵⁰ The bilateral repatriation rates are weighted with the GDP of the partner countries to construct the national average rates.

outgoing links from Denmark, these routes will no longer be chosen, and hence also not the starting link USA-DNK. These flows are now passing through GBR, NLD, SWE and FIN, which are the top 3 conduit countries and number 6 in the baseline. Tax-minimising routes from China pass Denmark, in the baseline because the bilateral rate is 5%, the lowest level for outgoing flows from China. Also these flows disappear. Finally, Denmark is one of the few destination countries for which Israel has a zero withholding tax. The standard rate will also block Denmark as a conduit country for flows from Israel. Denmark will be replaced as a conduit by Estonia, for which Israel has a zero bilateral dividend rate.

Table 3: Top 5 links with loss and gain in link use in Scenario 1: DNK unilateral

DNK-uni			DNK-uni		
Loss in link use			Gain in link use		
		difference			difference
USA	DNK	-3.544	USA	GBR	1.063
DNK	USA	-1.398	USA	NLD	0.832
CHN	DNK	-0.544	USA	SWE	0.722
ISR	DNK	-0.518	USA	FIN	0.719
DNK	GBR	-0.510	ISR	EST	0.209

To sum up, the overall impact is that Denmark will no longer be attractive as a conduit country because MNEs can no longer use the reduced tax rates on outgoing flows from Denmark. For the position of Denmark as a conduit, the policy is effective but hardly has any impact at the global level.

6.2 Scenario 2: EU-wide

In the *EU-wide* scenario, we explore what happens when all outgoing links from the EU are subjected to a policy that denies the treaty benefits when the link is used on an indirect route, standard rates being applied instead of reduced bilateral rates. Within the EU, the PSD applies to direct dividend repatriation. This scenario covers 3210 links, almost 28% of all links. The treaty shopping gain is reduced by 1.1 percentage points to an average worldwide gain of 4.5%. The resulting worldwide average tax rate now is 5.8%. The 1.1 percentage-point reduction at world level may seem modest. Still, it is a fifth of the treaty shopping gain in the baseline.

It must be realised that this is an average of all country-country links. The average increases in the dividend repatriation tax rates by country, incoming and outgoing, are given in Annex B2. For Greece, Ireland and Spain, for example, the increases of the average outgoing rates are 8.5, 7.5 and 7.0 percentage points, respectively.

Table 4: Top 5 countries with loss and gain in network centrality in Scenario 2: EU-wide

EU-wide				EU-wide			
	Level	Difference	Ranking		Level	Difference	Ranking
Centrality loss				Centrality gain			
NLD	0.014	-11.222	53	GBR	25.106	10.309	1
SWE	0.000	-9.807	105	SGP	13.530	6.969	2
FIN	0.000	-8.469	74	MYS	11.594	6.550	3
DNK	0.000	-7.857	71	ARE	9.992	5.461	4
CHE	0.000	-6.974	106	QAT	7.340	4.428	6

For 54% of the country pairs, an indirect route is optimal compared to the 66% in the reference. This indicates a substantial reduction of the indirect routes for treaty shopping, but also shows that ample possibilities for treaty shopping remain. Also the ranking of conduit countries completely changes as some EU member states are less likely to be used on indirect routes, see also Annex B2. The top 3 conduits are now the UK, Singapore and Malaysia. Other countries take over the role of conduits and replace some EU member states, albeit at a higher level of repatriation taxation. The UK (GBR) remains the top-ranking conduit country as it has a standard rate of zero. The other top conduits are also countries with a standard withholding tax rate on dividends of zero percent (SGP, ECU, MYS, CUW). Other European countries with a non-zero withholding tax on dividends are not conduit countries in this scenario compared to the baseline. Examples are the Netherlands, Sweden (CHE), Finland and Switzerland.

Inspection of the changes to the bilateral links shows that similar mechanisms are at work as in the *DNK-uni* scenario. Dividend flows from the USA often use European countries for treaty shopping. The top 4 links that lose most from denying the treaty benefits are all links from the USA to a European conduit country. When these become more expensive, other routes for treaty shopping are used, quite often with some Asian countries or Australia as conduit countries, though these routes are not quite as beneficial as before. Due to the high GDP weight of the USA, the rerouting of these flows has a large impact on the global benefits of treaty shopping.

Table 5: Top 5 links with loss and gain in link use in Scenario 2: EU-wide

EU-wide		Difference	EU-wide		Difference
Loss in link use			Gain in link use		
USA	NLD	-3.872	USA	GBR	11.188
USA	DNK	-3.523	AUS	MYS	3.421
USA	FIN	-3.334	USA	AUS	2.859
USA	SWE	-3.330	MLT	IND	2.638
SWE	USA	-1.686	GBR	MYS	2.153

To conclude, an EU-wide application of the Danish BO cases has serious consequences for some EU countries. These are no longer attractive as conduits because of the higher, standard, rates on the outgoing flows. This seriously limits the possibilities for treaty shopping. The treaty shopping gains are reduced by 1.1 percentage points. Other countries take over the role as conduits such as Singapore and Malaysia. Some EU member states are not affected since their standard rate is zero and denying treaty benefits is of no consequence.

6.3 Scenario 3: *Inclusive Framework (IF)*

To be able to assess whether the 1.1 percentage-point reduction of the treaty shopping gain is large or not we compare it with another scenario covering many countries and their treaties. This is the *Inclusive Framework* scenario, which covers almost 3500 links, including US links for tax agreements which contain LOB clauses supplemented by anti-conduit regulations. The treaty shopping gain is 4.2 percentage points, which is 1.4 percentage points lower than in the baseline. The difference to the *EU-wide* scenario is only 0.3 percentage point. Given the comprehensive nature of the *IF* scenario

with its large number of covered links, we may conclude that the impact of the *EU-wide* scenario is large.

Although the global impact of both scenarios is of similar magnitude, another set of countries is facing the larger impact as quite a different set of country links is affected. Annex B3 lists (in the column MCNT) the number of the links involved per country. The UK (GBR) is the country with the most affected links. Yet, in table 6, which presents the countries with the largest change in network centrality, we do not see it in the left panel. On the right, we even see that the UK gains and remains in first place in the conduit ranking. The reason that the UK wins as a conduit is that the link USA-GBR is not affected for treaty shopping because there is no Compliant Tax Agreement between both countries, and hence this link is not covered.

Table 6: Top 5 countries with loss and gain in network centrality in Scenario 3: IF (s.r.)

IF (s.r.)	Level	Difference	Ranking	IF (s.r.)	Level	Difference	Ranking
Centrality loss				Centrality gain			
SWE	0.024	-9.783	48	ECU	21.926	19.421	2
FIN	0.000	-8.469	90	GBR	24.046	9.249	1
NLD	3.851	-7.385	14	CUW	10.392	8.376	3
CHE	0.016	-6.957	50	JOR	6.689	5.794	6
LUX	0.021	-6.941	49	LBN	4.645	4.626	10

Observing the largest changes in link use makes clear what happens. Many EU countries lose their conduit function for flows from the USA, and these flows are diverted via the UK (GBR), as there is no CTA between the USA and the UK. Also Ecuador and Curacao become important conduit countries. These countries were in 26th and 35th place, respectively, in the conduit ranking in the baseline. The *IF* scenario affects no links with Ecuador and only 6 with Curacao; hence, these countries are able to take over a key role in treaty shopping from traditional European conduits.

Table 7: Top 5 links with loss and gain in link use in Scenario 3: IF (s.r.)

IF (s.r.)	Difference		IF (s.r.)	Difference	
	Loss in link use			Gain in link use	
USA	NLD	-3.894	USA	GBR	14.321
USA	DNK	-3.542	CHN	ECU	7.370
USA	SWE	-3.361	CHN	HKG	5.334
USA	FIN	-3.345	CUW	CHN	5.025
CAN	ISR	-2.279	MLT	IND	5.022

There is another difference between the *EU* scenario and the *OECD IF* scenario, apart from just the set of links covered. In the former scenario, all outgoing links of the EU member states were affected, hence leaving them no 'escape routes', i.e. a link with a reduced treaty rate to be part of a treaty shopping route. Whereas in the *OECD IF* case practically all participating jurisdictions still have 'escape routes'. The USA and the UK are prominent examples of this. The reason for this is that the MLI for implementing the BEPS Action 6 minimum standard is essentially working bilaterally; jurisdictions indicate which bilateral tax agreements they want to be covered, which then has to be

reciprocated by the partner jurisdictions. As jurisdictions do not indicate all their treaties, some of the links remain open for treaty shopping purposes.

To sum up, the overall impact of the *IF* scenario is comparable to the *EU-wide* scenario, there is a 1.4 percentage-point reduction in the gain from treaty shopping. More or less the same number of country-country links is affected. An important difference, however, is that, in the *IF* scenario, the participating countries have ‘escape routes’. These are bilateral treaties with reduced rates which are not compliant with the minimum standard and can be used for treaty shopping. The USA-GBR link is an example. This explains why, notwithstanding the participation of the world’s largest economy, the impact is not much larger than in the EU scenario.

6.4 Scenario 4: *EU-wide - prohibitive penalty*

In this second *EU-wide* scenario, we explore what happens when all outgoing links from the EU are subjected to a prohibitive tax penalty when used on an indirect route. This is instead of replacing the bilateral reduced rates with standard rates. As before, within the EU, the PSD applies to direct dividend repatriation. The treaty shopping gain is reduced by 1.5 percentage points to an average worldwide gain of 4.1%. This reduction is 0.4 percentage point more than in the earlier *EU-wide* scenario. The reduction is even larger than in the *IF* scenario even though that scenario covers more links. This is all caused by the fact that now also the EU countries with a standard rate of zero percent are affected.⁵¹

The ranking of conduit countries completely changes as none of the EU member states will now be used on indirect routes compared to the baseline, see also Annex B4. The top 3 conduits are Malaysia, Australia and Singapore, see table 8. The UK (GBR) disappears from the conduit ranking in comparison with scenario *EU-wide*. Other countries take over the role of conduits and replace all EU member states, albeit at a higher level of repatriation taxation.

Table 8: Top 5 countries with loss and gain in network centrality in Scenario 2: EU-wide (p.p)

EU-wide pp	Level	Difference	Ranking	EU-wide pp	Level	Difference	Ranking
Centrality loss				Centrality gain			
GBR	0	-14.80	107	AUS	18.93	16.89	2
NLD	0	-11.24	90	MYS	20.66	15.61	1
SWE	0	-9.81	104	SGP	9.98	3.42	3
LVA	0	-9.20	82	ARE	7.33	2.80	4
EST	0	-8.94	69	ECU	4.85	2.34	5

Dividend flows from the US often use European countries for treaty shopping. The top 5 links that lose most from blocking the possibilities for treaty shopping are all such links. This is similar to before. However, the most striking difference between table 9 and table 5 is the role of the UK (GBR). In the right panel of table 5, we see links of the UK gain in use, whereas in the left panel of table 9, we see the USA-GBR link losing most in use.

⁵¹ These are: CYP, EST, HUN, LVA, MLT, SVK and GBR.

Table 9: Top 5 links with loss and gain in link use in Scenario 2: EU-wide (p.p)

EU-wide pp		Difference	EU-wide pp		Difference
Loss in link use			Gain in link use		
USA	GBR	-4.300	AUS	MYS	16.126
USA	NLD	-3.635	USA	AUS	12.407
USA	DNK	-3.445	MYS	CHN	5.780
USA	FIN	-3.273	JPN	AUS	3.407
USA	SWE	-3.206	SGP	USA	1.922

To conclude, an EU-wide stringent application of the Danish BO cases that also deals with the standard rate of zero percent of the withholding tax in some countries will have serious consequences for all EU countries. All of them are no longer attractive as conduits because of the penalty on outgoing flows. This seriously limits the possibilities for treaty shopping, with the gains reduced by 1.5 percentage points at the global level. For the EU countries, the effects are even larger.

6.5 Scenario 5: *OECD-IF (Strong)*

So far, we have encountered three constraints in combatting treaty shopping successfully. These are i) a low number of participating countries, ii) participating countries with ‘escape routes’ and iii) countries with a standard rate of zero. In our final policy scenario, we address all three of them. The *IF* scenario, number 3, is taken as a point of departure. First of all, we add to the set of participating countries the OECD member states not yet included. Secondly, for all OECD countries all outgoing links are covered; none of the OECD countries will have an ‘escape route’. Thirdly, we apply the prohibitive penalty, hence dealing with the standard rates of zero.⁵² In particular, additions two and three make the difference to the *IF* scenario.

In this scenario, treaty shopping is all but eliminated, the worldwide average treaty shopping gain is reduced to a mere 0.3 percentage point. The average repatriation tax is now 9.0%. For only a fifth of all country pairs, an indirect route has a lower tax burden than the direct route. The top three of conduits are ECU, CUW and ARE. All remaining conduits are non-OECD countries. The values of the centrality indicator are also much lower than in previous scenarios, suggesting that the indirect routes are more spread over a number of countries instead of being concentrated via a few conduit countries. Besides, the number of indirect routes is much smaller.

Table 10: Top 5 countries with loss and gain in network centrality: OECD-IF (Strong)

OECD-IF	Level	Difference	Ranking	OECD-IF	Level	Difference	Ranking
Centrality loss				Centrality gain			
GBR	0	-14.798	106	VEN	0.670	0.503	6
NLD	0	-11.236	88	ECU	3.002	0.497	1
SWE	0	-9.807	102	CUW	2.224	0.208	2
EST	0	-8.938	68	BLR	0.426	0.170	7
LVA	0.307	-8.889	19	LBN	0.110	0.090	25

⁵² This scenario resembles the final scenario in the CPB/OECD (2019) study where, for treaties involving an OECD member state, the links, both ways, were blocked for treaty shopping.

The most important country links were those between the USA and European conduit countries, see table 11. These are no longer used in this scenario. It is interesting to observe that the links that gain in use are typically those links that were earlier avoided for direct dividend repatriation such as between the USA and China and the USA and Japan. These are also the largest economies.

Table 11: Top 5 links with loss and gain in link use in Scenario 4: EU standard rates

OECD-IF	Difference		OECD-IF	Difference	
	Loss in link use			Gain in link use	
USA	GBR	-4.300	CHN	USA	5.138
USA	NLD	-3.635	USA	CHN	4.528
USA	DNK	-3.445	JPN	USA	2.118
USA	FIN	-3.273	USA	JPN	1.623
USA	SWE	-3.206	USA	DEU	1.252

The upshot of policy scenario 5 is that with a large set of participating countries without ‘escape routes’ and when also the countries with a withholding tax of zero percent apply a tax penalty on indirect routes, treaty shopping disappears almost completely.

6.6 Summary of scenario results

Taking stock of the different policy scenarios, we first of all note that, with more links involved, the impact on the worldwide average resulting tax rate and the potential treaty shopping gain increases. With only 107 links in the scenario *Denmark unilateral*, no impact is visible, whereas in the scenarios with more than 3000 affected links, treaty shopping is substantially limited. The resulting tax rate is also higher, 1.1 to 1.4 percentage points higher than in the baseline, see table 12. Recall that these figures are worldwide averages, the differences between countries are huge.

Table 12: Summary of results

	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
		<i>DNK-uni</i>	<i>EU-wide</i>	<i>IF</i>	<i>EU-wide (p.p.)</i>	<i>OECD-IF (Strong)</i>
instrument		<i>Standard withholding tax rate</i>			<i>Prohibitive tax rate</i>	
Links covered (number)	0	107	3210	3492	3210	6854
Repatriation tax, direct routes (%)	9.37	9.37	9.37	9.37	9.37	9.37
Repatriation tax, optimal routes (%)	3.77	3.79	4.85	5.15	5.28	9.03
Treaty shopping gain (%)	5.60	5.58	4.52	4.22	4.09	0.34
Reduction of treaty shopping gain (%)		0.02	1.08	1.38	1.51	5.26
% pairs indirect route optimal	65.7	65.1	53.9	52.8	45.6	20.1
Top 3 conduit countries: 1	GBR	GBR	GBR	GBR	MYS	ECU
2	NLD	NLD	SGP	ECU	AUS	CUW
3	SWE	SWE	MYS	CUW	SGP	ARE

Nevertheless, there is an impact on the dividend flows from Denmark in scenario 1. This affects the position of Denmark as a conduit country because it is no longer attractive as a conduit. We

particularly see the route from the USA to Denmark being used less. These flows are often redirected to other conduit countries.

In the EU-wide scenario, more than 3000 links are blocked for treaty shopping by a prohibitive tax penalty. This seriously limits the possibility of treaty shopping. Of course, there are still opportunities for using indirect routes, but these are on average more expensive. EU countries are no longer conduits and Australia and some East Asian countries become relatively more attractive as conduits. This also indicates that American MNEs divert less dividend through Europe and that treaty shopping in Asia becomes more attractive. The average dividend repatriation tax rate is 4.9% now. This reduces the average treaty shopping gain by 1.1 percentage points. The IF scenario includes even more links and the overall effects are somewhat larger. Interestingly, there is no compliant tax agreement between the USA and the UK. As a result, the UK is still at the top of the conduit ranking. Generally speaking, missing CTAs mean that 'escape routes' exist for participating countries. The existence of 'escape routes' is a second important conclusion from our network analysis. The prohibition on the use of tax treaty benefits on an indirect route is only effective if all or nearly all indirect routes from the source country are included in the policy.

The results of the EU-wide and IF scenario show the impact of using standard rates of withholding taxes instead of the reduced rates according to the treaties, following the outcomes of the Danish BO cases. This policy is more effective the higher the standard rates of withholding tax. However, the withholding tax rates may also be low or even zero percent. Then, there is hardly no cost of using an indirect route. For 30 of the 108 jurisdictions, the standard rate is zero percent and denying treaty benefits is meaningless. Because of the large number of countries with a zero standard tax rate, treaty shopping is less restricted than with the absolute prohibition of the routes. This is an important third conclusion from the network analysis. It is illustrated in scenario 4, an EU-wide scenario with a high penalty on all routes instead of the standard rate of withholding tax. The resulting repatriation tax is 5.3 percentage points instead of 4.9 percentage points. The treaty shopping gains are reduced by an extra 0.4 percentage point in this scenario compared with *EU-wide*. There are 8% less advantageous indirect routes. Because the outgoing routes of all EU countries are included, the UK is no longer a conduit country as it was with the zero percent tax rate. Australia becomes an important conduit country now.

The resulting treaty shopping benefits are still sizable in spite of the reduction. The main reason for that is that many countries are not included in scenario *EU-wide (p.p.)*. This is different in the *IF* scenario. If the prohibitive penalty is applied in the IF scenario and also applied on all routes from the OECD countries, treaty shopping becomes almost non-existent. For only 20% of the country pairs, an indirect route is advantageous and the average gain is only 0.3 percentage point globally. Some of the non-OECD countries are the new conduit countries, but the role of conduits is mitigated because indirect routes are less important now. Interestingly, it is not necessary that all countries implement the policy, but if the OECD countries implement the penalty with all their partner countries and vice versa, tax treaty shopping becomes a marginal tax avoidance strategy.⁵³

⁵³ Especially with the last scenario the market for conduit services may be small, as suggested by an index of diverted flows. This is explained in Annex C. Also the strategic options for the remaining conduit countries are briefly mentioned.

On the other hand, we have demonstrated the risk of ‘escape routes’. Here there is a striking analogy with the empirical study by Casi, Spengel and Stage (2018)⁵⁴. Their title is “Cross-Border Tax Evasion After the Common Reporting Standard (CRS): Game Over?” and their answer is “no”. The CRS is an OECD launched global standard for the Automatic Exchange of (tax) Information. The study reports a statistically significant decrease of deposits⁵⁵ owned by EU and OECD residents in major offshore countries in the world upon the local implementation of the CRS as is the aim of the policy. However, it also documents that the cross-border deposits in the United States increase upon CRS implementation (by the other countries). They conclude that the US, which so far did not commit to the CRS, seems to emerge as a potentially attractive location for cross-border tax evasion. This is another illustration of the need to include as many countries as possible to combat tax avoidance effectively.

⁵⁴ Casi, Elisa, Christoph Spengel and Barbara M.B. Stage, 2018, Cross-Border Tax Evasion After the Common Reporting Standard: Game Over?, University of Mannheim / ZEW Working Paper.

⁵⁵ Cross-border deposits from data of the Bank for International Settlements.

7 Conclusion

We have used the recent rulings in the BO cases to provide an overview of the indications of abusive situations which will disallow the advantages according to EU directives and applicable DTTs. We conclude that the rulings represent a clear alignment of the policies to combat tax avoidance within the EU and the OECD. Furthermore, it is found that the rulings indeed provide guidelines to disentangle abusive behaviour from valid economic activity eligible for advantages according to EU directives and DTTs.

It seems clear that the economic test conducted to draw this line affects the overall potential for treaty shopping as it is envisaged in both the principle purpose test as developed in OECD BEPS and the EU ATAD General Anti-Abuse Rule. Moreover, it is based on factual patterns found in the Danish beneficial ownership cases.

To estimate the impact of these rulings on the overall potential for treaty shopping, we have used the network analysis developed by van 't Riet and Lejour (2018). This network analysis determines the cheapest tax routes for 108 countries, which are often indirect routes via other (conduit) countries. We have established that these routes change if treaty shopping from, and via, Denmark is no longer possible because of the CJEU rulings in the Danish BO cases. Moreover, we have analysed how dividend flows are affected if the outcome of the cases is applied to the entire EU and to all countries in the Inclusive Framework of the OECD BEPS project.

The overall result for the different policy scenarios is that the worldwide average tax rate for repatriation of dividend will be higher and the potential treaty shopping gains will be lower. In the first scenario, only the dividend distributions from Denmark are affected, ultimately rendering it less attractive as a conduit country. However, from a global perspective, the potential for treaty shopping is hardly reduced.

In the EU-wide scenario, the opportunities are seriously limited, and while there are still many opportunities for using tax-minimising indirect routes, these are on average more expensive. EU countries are no longer attractive as conduit countries. Including all countries of the OECD Inclusive Framework programme would even be more effective, but substantial possibilities for treaty shopping would still remain as other countries take over the role as conduit countries. These are non-EU and mainly non-OECD countries. Moreover the anti-abuse legislation in bilateral tax treaties is only implemented if both countries agree to it (MLI principle), while we assume that the EU member states impose taxes on all outgoing dividend flows when part of an indirect route. This has different effects on the tax-minimising routes and position of conduit countries.

The analysis also shows that the wider application of the outcome of the Danish BO cases has its limitations. Firstly, given that standard withholding tax rates on dividends are low or zero for some countries, indirect routes can still be attractive unless prohibitive taxes could be imposed. Secondly, even if all countries of the BEPS Inclusive Framework implement the case outcomes in their tax policy, possibilities for treaty shopping still remain as long as the participating countries allow for escape routes, i.e. treaties not covered. It is important to stress the inclusion of as many countries as possible with all their bilateral treaties to combat treaty shopping effectively.

List of abbreviations

ATADI: Anti-Tax Avoidance Directive - Council Directive (EU) 2016/1164 of 12 July 2016 – EU directive laying down rules against tax avoidance practices that directly affect the functioning of the internal market.

BEPS: Base Erosion and Profit Shifting - OECD/G20 project to set up an international framework to combat tax avoidance by multinational enterprises ("MNEs") using base erosion and profit shifting tools.

CJEU: Court of Justice of the European Union (as of 1 December 2009) or Court of Justice of the European Communities (before 1 December 2009)

CPB: Netherlands Bureau for Economic Policy Analysis

CTA: Compliant Tax Agreement

DTT: Double Tax Treaty

GAAR: General Anti-Avoidance Rule

IBFD: International Bureau of Fiscal Documentation

IRD: Interest and Royalties Directive - Council Directive 2003/49/EC of 3 June 2003 on a common system of taxation applicable to interest and royalty payments made between associated companies of different Member States

LOB: Limitation Of Benefits – Provisions in Double Tax Treaties to eliminate treaty shopping

MLI: Multilateral Instrument – OECD Multilateral Convention to Implement Tax Treaty Related Measures to Prevent BEPS

OECD: Organisation for Economic Co-operation and Development

OECD MC: OECD Model Tax Convention on Income and Capital

OECD MC Commentary: Explanatory commentary to the OECD Model Tax Convention

PSD: Parent-Subsidiary Directive – Council Directive 90/435/EEC of 23 July 1990 on the common system of taxation applicable in the case of parent companies and subsidiaries of different Member States as amended by Council Directive 2003/123/EC of 22 December 2003

PPT: Principal Purpose Test: Anti-abuse rule based on the principal purposes of transactions or arrangements as found in Article 7 of the OECD Multilateral Instrument or the 2017 commentary to the OECD Model Convention.

Annex A

CIT	Corporate Income Tax rate (%)
WHT STD	Standard rate of Withholding Tax on dividends (%)
SHOPOUT	The average repatriation tax rate for dividends (%) coming from the (source) jurisdiction concerned, on optimal routes
SHOPIN	The average repatriation tax rate for dividends (%) going to the (destination) jurisdiction concerned, on optimal routes
TS GAIN OUT	The average Treaty Shopping Gain for outgoing dividends (%), i.e. the difference between the rates on the optimal and the direct routes, for the jurisdiction concerned
TS GAIN IN	The average Treaty Shopping Gain for incoming dividends (%), i.e. the difference between the rates on the optimal and the direct routes, for the jurisdiction concerned

COUNTRY	TAXES			REPATRIATION TAX				CENTRALITY	
	Code	CIT	WHT std	SHOPOUT	SHOPIN	TS Gain Out	TS Gain In	Value	Ranking
ALBANIA	ALB	15	15	1.74	1.90	11.75	13.95	0.06	69
ALGERIA	DZA	23	15	1.70	24.46	10.69	10.49		84
ANGOLA	AGO	30	10	10.81	31.32	0.28	12.44		85
ARGENTINA	ARG	35	35	11.50	13.40	20.19	6.27		86
ARUBA	ABW	25	10	6.59	1.90	23.45	17.64	0.00	79
AUSTRALIA	AUS	30	30	1.71	1.93	7.35	5.23	2.04	34
AUSTRIA	AUT	25	25	1.75	1.91	5.10	3.67	1.99	37
AZERBAIJAN	AZE	20	10	6.66	1.90	4.34	14.42	0.03	73
BAHAMAS	BHS	0	0	1.74	1.90	21.90	17.75	0.46	53
BAHRAIN	BHR	46	0	1.48	1.90	20.84	15.86	0.90	43
BARBADOS	BRB	25	15	1.74	1.90	27.21	8.72	0.33	56
BELARUS	BLR	18	12	1.74	1.90	10.05	14.39	0.26	58
BELGIUM	BEL	33.99	30	1.63	1.91	3.42	3.21	2.85	22
BERMUDA	BMU	0	0	1.74	1.90	21.90	17.75	0.46	51
BOTSWANA	BWA	30	7.5	8.37	7.90	0.29	11.86	0.00	82
BRAZIL	BRA	34	15	11.15	12.42	4.32	7.37		87
BRUNEI DARUSSALAM	BRN	18.5	0	1.74	1.90	2.76	16.07	2.63	23
BULGARIA	BGR	10	5	1.74	1.90	5.69	5.23	3.30	19
CANADA	CAN	26.3	25	1.75	1.94	6.85	5.88	0.04	70
CAYMAN ISLANDS	CYM	0	0	1.74	1.90	21.90	17.75	0.46	50
CHILE	CHL	25	35	3.25	2.07	18.87	13.27	0.14	61
CHINA	CHN	25	10	6.62	1.57	3.32	7.96	0.04	71
COLOMBIA	COL	34	5	1.36	12.33	4.65	8.91	0.00	77
COSTA RICA	CRI	30	15	16.24	31.32	17.42	11.77		88
CROATIA	HRV	18	12	1.73	19.56	9.04	9.88		89
CURACAO	CUW	22	0	1.74	1.90	1.47	17.75	2.02	35
CYPRUS	CYP	12.5	0	1.74	1.90	16.57	6.11	2.60	24
CZECH REPUBLIC	CZE	19	15	1.75	1.90	5.20	3.60	2.25	30
DENMARK	DNK	22	27	1.75	1.90	4.35	2.40	7.86	7
DOMINICAN REP.	DOM	27	10	1.63	28.39	9.33	12.62		90

ECUADOR	ECU	22	0	1.74	1.90	1.36	15.11	2.50	26
EGYPT	EGY	22.5	10	1.75	1.91	5.10	12.39	0.35	55
EQUATORIAL GUINEA	GNQ	35	25	25.70	36.23	0.23	11.54		91
ESTONIA	EST	20	0	1.74	1.90	1.82	5.34	8.94	5
FINLAND	FIN	20	20	1.75	1.90	3.70	2.15	8.47	6
FRANCE	FRA	33.33	30	1.73	1.96	2.94	2.53	2.95	20
GABON	GAB	30	20	16.05	1.89	4.43	16.94		92
GERMANY	DEU	30.2	25	1.77	1.99	5.17	2.44	2.41	28
GREECE	GRC	29	15	1.75	1.90	8.48	11.73	1.93	38
GUERNSEY	GRN	0	0	1.74	1.90	21.90	17.74	0.47	47
HONGKONG	HKG	16.5	0	1.75	1.90	21.27	12.75	1.99	36
HUNGARY	HUN	9	0	1.74	1.90	4.79	4.66	6.70	10
ICELAND	ISL	20	18	1.74	1.90	6.49	5.42	1.92	39
INDIA	IND	30	0	1.20	8.32	0.31	4.94	0.08	65
INDONESIA	IDN	25	20	6.60	2.06	5.40	8.57	0.00	76
IRELAND	IRL	12.5	20	1.75	1.90	7.52	3.89	3.43	18
ISLE OF MAN	IMN	0	0	1.74	1.90	21.90	17.75	0.46	52
ISRAEL	ISR	24	25	1.75	1.90	10.83	8.01	2.45	27
ITALY	ITA	27.9	26	1.77	1.95	6.27	5.48	1.08	41
JAMAICA	JAM	25	33.33	6.62	2.07	12.76	18.25		93
JAPAN	JPN	35.4	20	1.73	3.76	4.64	4.82	0.08	64
JERSEY	JRY	0	0	1.74	1.90	21.90	17.74	0.47	48
JORDAN	JOR	20	0	1.74	1.90	2.05	29.64	0.90	44
KAZAKHSTAN	KAZ	20	15	1.74	1.90	7.14	7.44	0.04	72
KOREA REPUBLIC	KOR	22	20	20.76	1.54	0.25	6.49		94
KUWAIT	KWT	15	0	1.72	16.61	3.64	9.20		95
LATVIA	LVA	15	0	1.74	1.90	3.40	3.69	9.20	4
LEBANON	LBN	15	10	1.74	1.90	28.18	26.59	0.02	75
LIBYA	LBY	20	0	1.74	6.80	2.20	28.89		96
LIECHTENSTEIN	LIE	12.5	0	1.74	1.90	21.37	16.06	0.74	45
LITHUANIA	LTU	15	15	1.74	1.90	6.99	5.01	2.53	25
LUXEMBOURG	LUX	27.08	15	1.55	1.90	1.01	3.75	6.96	9
MACAO	MAC	12	0	1.74	13.67	21.40	14.92		97
MALAYSIA	MYS	24	0	1.75	1.90	0.47	11.49	5.04	13
MALTA	MLT	35	0	1.48	1.90	16.06	4.84	4.28	15
MAURITIUS	MUS	15	0	1.74	1.90	21.26	14.21	1.03	42
MEXICO	MEX	30	10	1.27	31.35	5.48	1.52		98
MONGOLIA	MNG	25	20	6.62	2.06	8.83	25.01		99
NAMIBIA	NAM	32	10	1.64	11.08	8.98	29.26		100
NETHERLANDS	NLD	25	15	1.74	1.92	2.20	1.31	11.24	2
NEW ZEALAND	NZL	28	30	1.74	5.37	11.54	5.26	0.11	62
NIGERIA	NGA	30	10	8.56	7.59	2.16	11.56	0.00	83
NORWAY	NOR	24	25	1.75	1.91	9.60	6.73	2.28	29
OMAN	OMN	15	10	11.57	1.89	0.76	13.06	0.07	67
PAKISTAN	PAK	30	12.5	6.39	31.32	5.50	6.80		101
PANAMA	PAN	25	10	5.65	1.90	24.26	16.15	0.00	78

PERU	PER	30	5	5.93	7.86	0.29	12.83		102
PHILIPPINES	PHL	30	30	7.98	7.86	8.89	6.15		103
POLAND	POL	19	19	1.75	1.91	5.89	4.55	1.51	40
PORTUGAL	PRT	27.5	25	1.67	1.90	6.15	4.68	2.25	31
PUERTO RICO	PRI	30	15	15.80	1.88	0.26	17.77	0.00	80
QATAR	QAT	10	0	1.74	1.90	5.68	13.68	2.91	21
ROMANIA	ROM	16	5	1.75	1.90	5.31	5.42	3.53	17
RUSSIAN FEDERATION	RUS	20	15	1.77	1.93	6.96	5.25	0.36	54
SAUDI ARABIA	SAU	20	5	1.60	21.53	5.42	10.23		104
SERBIA AND MONT.	YUG	15	20	20.85	1.88	0.25	17.87		105
SEYCHELLES	SYC	30	15	1.74	1.90	30.67	16.62	0.25	59
SINGAPORE	SGP	17	0	1.75	1.90	2.78	10.97	6.56	11
SLOVAK REPUBLIC	SVK	21	0	1.74	1.90	1.33	10.95	6.20	12
SLOVENIA	SVN	19	15	1.74	1.90	5.47	4.25	2.08	32
SOUTH AFRICA	ZAF	28	15	1.69	1.90	5.50	4.52	2.08	33
SPAIN	ESP	29	19	1.64	1.93	6.98	5.22	4.21	16
SURINAME	SUR	36	25	9.11	1.90	16.54	17.60		106
SWEDEN	SWE	22	30	1.75	1.91	3.53	1.79	9.81	3
SWITZERLAND	CHE	21.1	35	1.76	1.91	4.80	2.18	6.97	8
TAIWAN PROVINCE	TWN	17	20	6.67	1.83	11.23	14.66	0.00	81
THAILAND	THA	20	10	11.00	1.85	0.47	9.12	0.06	68
TRINIDAD AND TOB.	TTO	25	10	1.73	2.06	8.43	14.21	0.07	66
TUNISIA	TUN	25	5	1.70	26.42	4.74	8.14		107
TURKEY	TUR	20	15	6.67	1.86	6.62	9.23	0.02	74
UKRAINE	UKR	18	15	1.74	1.90	7.14	5.76	0.31	57
UNTD ARAB EMIRATES	ARE	0	0	1.75	1.91	7.90	11.16	4.53	14
UNITED KINGDOM	GBR	20	0	1.80	1.97	1.61	1.52	14.80	1
UNITED STATES	USA	21	30	2.49	2.54	8.25	3.95	0.60	46
URUGUAY	URY	25	7	1.72	1.90	6.27	16.25	0.09	63
VENEZUELA	VEN	34	34	1.63	11.34	11.64	3.38	0.17	60
VIRGIN ISLANDS U.S.	VIR	38.5	11	12.32	17.95	18.55	5.98		108
VIRGIN ISLANDS U.K.	VGB	0	0	1.74	1.90	21.89	17.74	0.46	49

Annex B.1 Denmark unilateral

MCNT	The number of incoming or outgoing links involved, for the jurisdiction concerned (max 214 per jurisdiction). This is twice the number of Compliant Tax Agreements (CTAs) in scenarios 3 and 5
SHOPOUT	The average repatriation tax rate for dividends coming from the (source) jurisdiction concerned, on optimal routes
SHOPIN	The average repatriation tax rate for dividends going to the (destination) jurisdiction concerned, on optimal routes
DIFOUT (IN)	Difference (change) in the average repatriation tax rates, for outgoing (incoming) dividend flows. These values are always positive because all policy scenarios limit the treaty shopping possibilities
CENTRALITY VALUE	The network centrality indicator, indicating centrality in the tax network
RANK (REF)	The value of the centrality indicator. We use the Betweenness indicator
	Ranking of jurisdictions on the network centrality indicator, i.e. network centrality, for the current scenario (and for the REFERENCE scenario)
DIFVAL	Difference between the value of the network centrality indicator in the policy scenario and that in the baseline scenario. A positive value means an increase in relative network centrality.

CTR	LINKS		REPATRIATION TAX			CENTRALITY			DIFVAL
	MCNT	SHOPOUT	SHOPIN	DIFOUT	DIFIN	VALUE	RANK	RANK REF	
ALB	1	1.74	2.01	0	0.11	0.06	68	69	0.00
DZA	1	1.70	24.55	0	0.09		83	84	0.00
AGO	1	10.81	31.40	0	0.08		84	85	0.00
ARG	1	11.50	13.41	0	0.01		85	86	0.00
ABW	1	6.59	2.01	0	0.11	0.00	78	79	0.00
AUS	1	1.71	1.99	0	0.06	2.32	28	34	0.28
AUT	1	1.75	1.91	0	0.00	2.02	36	37	0.03
AZE	1	6.66	1.92	0	0.02	0.03	72	73	0.00
BHS	1	1.74	2.01	0	0.11	0.49	52	53	0.02
BHR	1	1.48	2.01	0	0.11	0.95	43	43	0.04
BRB	1	1.74	2.01	0	0.11	0.36	55	56	0.02
BLR	1	1.74	1.96	0	0.06	0.28	57	58	0.02
BEL	1	1.63	1.91	0	0.00	2.90	21	22	0.05
BMU	1	1.74	2.01	0	0.11	0.49	50	51	0.02
BWA	1	8.37	7.98	0	0.08	0.00	81	82	0.00
BRA	1	11.15	12.47	0	0.05		86	87	0.00
BRN	1	1.74	2.01	0	0.11	2.76	22	23	0.13
BGR	1	1.74	1.90	0	0.00	3.38	18	19	0.08
CAN	1	1.75	1.96	0	0.02	0.04	69	70	0.00
CYM	1	1.74	2.01	0	0.11	0.49	49	50	0.02
CHL	1	3.25	2.09	0	0.02	0.15	60	61	0.01
CHN	1	6.62	1.59	0	0.02	0.04	70	71	0.00
COL	1	1.36	12.39	0	0.06	0.00	76	77	0.00
CRI	1	16.24	31.40	0	0.08		87	88	0.00
HRV	1	1.73	19.57	0	0.02		88	89	0.00
CUW	1	1.74	2.01	0	0.11	2.12	32	35	0.11
CYP	1	1.74	1.90	0	0.00	2.63	25	24	0.03

CZE	1	1.75	1.90	0	0.00	2.29	30	30	0.04
DNK	107	6.09	1.90	4.346	0.00		89	7	-7.86
DOM	1	1.63	28.47	0	0.08		90	90	0.00
ECU	1	1.74	2.01	0	0.11	2.64	24	26	0.13
EGY	1	1.75	1.97	0	0.06	0.38	53	55	0.03
GNQ	1	25.70	36.30	0	0.07		91	91	0.00
EST	1	1.74	1.90	0	0.00	9.22	6	5	0.28
FIN	1	1.75	1.90	0	0.00	9.29	4	6	0.82
FRA	1	1.73	1.96	0	0.00	2.99	20	20	0.04
GAB	1	16.05	2.01	0	0.11		92	92	0.00
DEU	1	1.77	1.99	0	0.00	2.45	26	28	0.04
GRC	1	1.75	1.90	0	0.00	1.96	37	38	0.03
GRN	1	1.74	2.01	0	0.11	0.49	46	47	0.02
HKG	1	1.75	2.02	0	0.11	2.08	35	36	0.08
HUN	1	1.74	1.90	0	0.00	6.72	9	10	0.03
ISL	1	1.74	1.90	0	0.00	1.95	38	39	0.03
IND	1	1.20	8.36	0	0.03	0.08	64	65	0.00
IDN	1	6.60	2.10	0	0.04	0.00	75	76	0.00
IRL	1	1.75	1.90	0	0.00	3.48	17	18	0.05
IMN	1	1.74	2.01	0	0.11	0.49	51	52	0.02
ISR	1	1.75	1.90	0	0.00	2.42	27	27	-0.03
ITA	1	1.77	1.95	0	0.00	1.09	41	41	0.01
JAM	1	6.62	2.11	0	0.04		93	93	0.00
JPN	1	1.73	3.80	0	0.04	0.08	63	64	0.00
JRY	1	1.74	2.01	0	0.11	0.49	47	48	0.02
JOR	1	1.74	2.07	0	0.17	0.96	42	44	0.06
KAZ	1	1.74	2.01	0	0.11	0.04	71	72	0.00
KOR	1	20.76	1.60	0	0.06		94	94	0.00
KWT	1	1.72	16.61	0	0.00		95	95	0.00
LVA	1	1.74	1.90	0	0.00	9.27	5	4	0.08
LBN	1	1.74	2.06	0	0.16	0.02	74	75	0.00
LBY	1	1.74	6.96	0	0.15		96	96	0.00
LIE	1	1.74	2.01	0	0.11	0.77	44	45	0.03
LTU	1	1.74	1.90	0	0.00	2.66	23	25	0.13
LUX	1	1.55	1.90	0	0.00	7.04	7	9	0.08
MAC	1	1.74	13.77	0	0.10		97	97	0.00
MYS	1	1.75	1.90	0	0.00	4.99	12	13	-0.05
MLT	1	1.48	1.90	0	0.00	4.43	14	15	0.15
MUS	1	1.74	2.01	0	0.11	1.09	40	42	0.06
MEX	1	1.27	31.35	0	0.00		98	98	0.00
MNG	1	6.62	2.25	0	0.19		99	99	0.00
NAM	1	1.64	11.24	0	0.17		100	100	0.00
NLD	1	1.74	1.92	0	0.00	12.26	2	2	1.02
NZL	1	1.74	5.42	0	0.05	0.12	61	62	0.01
NGA	1	8.56	7.67	0	0.08	0.00	82	83	0.00
NOR	1	1.75	1.91	0	0.00	2.31	29	29	0.03

OMN	1	11.57	2.00	0	0.11	0.07	66	67	0.00
PAK	1	6.39	31.36	0	0.04		101	101	0.00
PAN	1	5.65	2.01	0	0.11	0.00	77	78	0.00
PER	1	5.93	7.95	0	0.08		102	102	0.00
PHL	1	7.98	7.88	0	0.01		103	103	0.00
POL	1	1.75	1.91	0	0.00	1.53	39	40	0.02
PRT	1	1.67	1.90	0	0.00	2.26	31	31	0.01
PRI	1	15.80	1.99	0	0.11	0.00	79	80	0.00
QAT	1	1.74	2.01	0	0.11	3.04	19	21	0.13
ROM	1	1.75	1.90	0	0.00	3.54	16	17	0.01
RUS	1	1.77	1.97	0	0.04	0.38	54	54	0.02
SAU	1	1.60	21.62	0	0.09		104	104	0.00
YUG	1	20.85	1.99	0	0.11		105	105	0.00
SYC	1	1.74	2.01	0	0.11	0.26	58	59	0.01
SGP	1	1.75	1.90	0	0.00	6.43	10	11	-0.13
SVK	1	1.74	1.90	0	0.00	6.21	11	12	0.01
SVN	1	1.74	1.90	0	0.00	2.12	33	32	0.03
ZAF	1	1.69	1.93	0	0.02	2.09	34	33	0.01
ESP	1	1.64	1.93	0	0.00	4.32	15	16	0.12
SUR	1	9.11	2.01	0	0.11		106	106	0.00
SWE	1	1.75	1.91	0	0.00	10.78	3	3	0.98
CHE	1	1.76	1.91	0	0.00	7.01	8	8	0.04
TWN	1	6.67	1.87	0	0.04	0.00	80	81	0.00
THA	1	11.00	1.89	0	0.04	0.06	67	68	0.00
TTO	1	1.73	2.10	0	0.04	0.08	65	66	0.00
TUN	1	1.70	26.47	0	0.05		107	107	0.00
TUR	1	6.67	1.92	0	0.06	0.02	73	74	0.00
UKR	1	1.74	1.92	0	0.02	0.33	56	57	0.02
ARE	1	1.75	2.02	0	0.11	4.75	13	14	0.22
GBR	1	1.80	1.97	0	0.00	15.93	1	1	1.13
USA	1	2.49	2.54	0	0.00	0.57	45	46	-0.03
URY	1	1.72	2.01	0	0.11	0.10	62	63	0.01
VEN	1	1.63	11.35	0	0.01	0.17	59	60	0.00
VIR	1	12.32	17.98	0	0.04		108	108	0.00
VGB	1	1.74	2.01	0	0.11	0.49	48	49	0.02

Annex B.2 EU wide standard rate

CTR	LINKS	REPATRIATION TAX				CENTRALIY			
		MCNT	SHOPOUT	SHOPIN	DIFOUT	DIFIN	VALUE	RANK	RANK REF
ALB	30	6.37	3.14	4.63	1.24	0.1163	45	69	0.0589
DZA	30	1.61	26.10	-0.09	1.64		60	84	0.0000
AGO	30	10.96	34.78	0.15	3.46		61	85	0.0000
ARG	30	11.41	13.89	-0.08	0.49		62	86	0.0000
ABW	30	11.36	6.73	4.77	4.83		63	79	0.0000
AUS	30	1.62	4.61	-0.09	2.68	6.4661	10	34	4.4258
AUT	136	6.83	1.96	5.08	0.06		64	37	-1.9918
AZE	30	6.57	3.67	-0.08	1.77	0.1067	46	73	0.0752
BHS	30	1.65	6.83	-0.09	4.94	0.9364	29	53	0.4732
BHR	30	1.65	5.19	0.17	3.29	1.2924	20	43	0.3893
BRB	30	1.65	5.35	-0.09	3.46	0.6645	36	56	0.3302
BLR	30	1.65	3.69	-0.09	1.79	0.4629	39	58	0.2069
BEL	136	5.03	3.22	3.40	1.31		65	22	-2.8526
BMU	30	1.65	6.83	-0.09	4.93	0.9373	27	51	0.4736
BWA	30	8.52	5.89	0.16	-2.01	0.0032	56	82	0.0031
BRA	30	11.12	13.80	-0.03	1.38		66	87	0.0000
BRN	30	1.65	6.82	-0.09	4.92	6.9437	9	23	4.3170
BGR	136	3.82	1.95	2.07	0.06		67	19	-3.3010
CAN	30	1.65	3.87	-0.09	1.94	0.0722	49	70	0.0323
CYM	30	1.65	6.83	-0.09	4.93	0.9376	26	50	0.4737
CHL	30	3.21	4.77	-0.03	2.70	0.5591	37	61	0.4216
CHN	30	6.60	3.18	-0.01	1.61	0.0434	50	71	0.0045
COL	30	2.84	14.58	1.48	2.25	0.0022	58	77	-0.0002
CRI	30	16.39	34.12	0.14	2.80		68	88	0.0000
HRV	30	1.64	20.39	-0.09	0.84		69	89	0.0000
CUW	30	1.65	6.83	-0.09	4.93	6.2874	11	35	4.2720
CYP	136	1.49	1.95	-0.25	0.06	0.7070	33	24	-1.8958
CZE	136	6.93	1.96	5.19	0.06		70	30	-2.2524
DNK	136	6.07	1.96	4.33	0.06		71	7	-7.8569
DOM	30	10.83	31.75	9.20	3.37		72	90	0.0000
ECU	30	1.65	5.18	-0.09	3.28	4.4718	12	26	1.9670
EGY	30	1.66	4.17	-0.09	2.27	0.3923	41	55	0.0386
GNQ	30	25.83	39.44	0.13	3.21		73	91	0.0000
EST	136	1.49	1.95	-0.25	0.06	7.1504	7	5	-1.7875
FIN	136	5.42	1.95	3.67	0.05		74	6	-8.4693
FRA	136	4.66	3.29	2.93	1.33		75	20	-2.9523
GAB	30	16.01	6.23	-0.04	4.34		76	92	0.0000
DEU	136	6.92	3.20	5.15	1.21		77	28	-2.4050
GRC	136	10.20	1.96	8.46	0.06		78	38	-1.9284
GRN	30	1.65	6.82	-0.09	4.93	0.9492	23	47	0.4800
HKG	30	1.66	4.48	-0.09	2.57	3.8422	13	36	1.8492
HUN	136	1.49	1.96	-0.25	0.06	2.7294	15	10	-3.9657

ISL	136	8.14	1.95	6.39	0.06		79	39	-1.9219
IND	30	1.37	4.39	0.17	-3.93	0.5203	38	65	0.4437
IDN	30	6.56	4.09	-0.04	2.03	0.0116	55	76	0.0083
IRL	136	9.24	1.96	7.49	0.06		80	18	-3.4337
IMN	30	1.65	6.83	-0.09	4.93	0.9371	28	52	0.4735
ISR	30	1.66	3.32	-0.09	1.42	2.7521	14	27	0.2979
ITA	136	7.96	3.06	6.19	1.12		81	41	-1.0840
JAM	30	10.22	8.36	3.60	6.28		82	93	0.0000
JPN	30	1.63	5.97	-0.10	2.21	0.7054	34	64	0.6255
JRY	30	1.65	6.82	-0.09	4.93	0.9488	24	48	0.4799
JOR	30	1.65	13.87	-0.09	11.97	0.9799	21	44	0.0846
KAZ	30	6.41	4.09	4.67	2.19	0.0335	51	72	-0.0028
KOR	30	20.90	3.30	0.14	1.75		83	94	0.0000
KWT	30	1.63	17.49	-0.09	0.88		84	95	0.0000
LVA	136	1.49	1.95	-0.25	0.06	7.4413	5	4	-1.7546
LBN	30	1.65	5.19	-0.09	3.29	0.0119	54	75	-0.0073
LBY	30	1.65	11.49	-0.09	4.68	0.0187	52	96	0.0187
LIE	30	1.65	5.15	-0.09	3.25	0.9546	22	45	0.2149
LTU	136	8.49	1.95	6.75	0.06		85	25	-2.5349
LUX	136	2.46	1.95	0.91	0.06		86	9	-6.9613
MAC	30	1.65	17.98	-0.09	4.31		87	97	0.0000
MYS	30	1.66	3.02	-0.09	1.12	11.5940	3	13	6.5495
MLT	136	1.49	1.95	0.01	0.06	7.0050	8	15	2.7234
MUS	30	1.65	4.14	-0.09	2.24	2.2634	17	42	1.2334
MEX	30	1.18	31.99	-0.09	0.65		88	98	0.0000
MNG	30	6.53	4.57	-0.08	2.51		89	99	0.0000
NAM	30	6.27	13.42	4.63	2.34		90	100	0.0000
NLD	136	3.93	1.96	2.18	0.04	0.0145	53	2	-11.2216
NZL	30	1.65	7.58	-0.09	2.21	0.7875	31	62	0.6766
NGA	30	8.64	5.90	0.08	-1.68	0.0032	57	83	0.0031
NOR	136	11.33	1.96	9.58	0.06		91	29	-2.2752
OMN	30	11.49	4.44	-0.08	2.55	0.1416	44	67	0.0732
PAK	30	6.31	32.85	-0.09	1.53		92	101	0.0000
PAN	30	5.59	5.39	-0.06	3.49		93	78	-0.0001
PER	30	6.09	11.41	0.16	3.55		94	102	0.0000
PHL	30	11.10	3.98	3.13	-3.89		95	103	0.0000
POL	136	7.63	1.96	5.87	0.06		96	40	-1.5140
PRT	136	7.73	1.96	6.06	0.06		97	31	-2.2473
PRI	30	15.94	6.82	0.14	4.94		98	80	0.0000
QAT	30	1.66	4.52	-0.09	2.62	7.3402	6	21	4.4281
ROM	136	5.32	1.96	3.57	0.06		99	17	-3.5319
RUS	30	1.68	3.11	-0.09	1.18	2.0134	18	54	1.6489
SAU	30	1.50	23.47	-0.09	1.94		100	104	0.0000
YUG	30	20.98	6.82	0.14	4.94		101	105	0.0000
SYC	30	1.65	6.63	-0.09	4.73	0.6670	35	59	0.4183
SGP	30	1.66	2.95	-0.09	1.05	13.5305	2	11	6.9691

SVK	136	1.49	5.61	-0.25	3.71	0.8582	30	12	-5.3429
SVN	136	7.11	1.95	5.36	0.06		102	32	-2.0830
ZAF	30	1.60	3.17	-0.09	1.27	2.6893	16	33	0.6113
ESP	136	8.60	1.96	6.96	0.03		103	16	-4.2069
SUR	30	20.10	6.75	10.99	4.86		104	106	0.0000
SWE	136	5.26	1.96	3.51	0.05		105	3	-9.8075
CHE	136	6.53	1.95	4.78	0.04		106	8	-6.9736
TWN	30	6.59	5.20	-0.09	3.37	0.0001	59	81	0.0000
THA	30	11.05	4.56	0.05	2.70	0.1622	43	68	0.1010
TTO	30	6.27	4.21	4.54	2.15	0.0751	48	66	0.0036
TUN	30	1.63	28.50	-0.08	2.08		107	107	0.0000
TUR	30	6.58	3.71	-0.09	1.85	0.1021	47	74	0.0828
UKR	30	6.25	2.93	4.51	1.03	0.4064	40	57	0.0951
ARE	30	1.66	3.04	-0.09	1.13	9.9919	4	14	5.4610
GBR	136	1.54	2.02	-0.26	0.06	25.1064	1	1	10.3089
USA	30	2.36	3.40	-0.13	0.86	1.3005	19	46	0.7039
URY	30	6.30	5.18	4.58	3.29	0.2052	42	63	0.1143
VEN	30	1.54	11.61	-0.09	0.28	0.7717	32	60	0.6046
VIR	30	12.47	11.09	0.15	-6.86		108	108	0.0000
VGB	30	1.65	6.83	-0.09	4.93	0.9381	25	49	0.4739

Annex B.3 Inclusive Framework standard rate

CTR	LINKS	REPATRIATION TAX				CENTRALIY			
		MCNT	SHOPOUT	SHOPIN	DIFOUT	DIFIN	VALUE	RANK	RANK REF
ALB		1.46	4.83	-0.28	2.94	3.4310	17	69	3.3736
DZA		1.42	26.66	-0.28	2.20		78	84	0.0000
AGO		10.94	33.38	0.13	2.06		79	85	0.0000
ARG	38	31.61	14.32	20.11	0.92		80	86	0.0000
ABW	2	11.22	4.83	4.62	2.94	0.0000	66	79	0.0000
AUS	74	5.65	3.01	3.93	1.08	0.0009	63	34	-2.0395
AUT	124	5.10	3.54	3.36	1.63	0.0142	51	37	-1.9776
AZE		6.39	4.82	-0.27	2.93	0.0288	46	73	-0.0027
BHS		1.46	4.83	-0.28	2.94	0.9595	32	53	0.4963
BHR	54	1.40	4.76	-0.08	2.87	2.0510	23	43	1.1479
BRB	58	15.60	4.83	13.85	2.93	0.0000	67	56	-0.3343
BLR	2	1.46	4.84	-0.28	2.94	4.2996	12	58	4.0436
BEL	136	3.47	4.79	1.84	2.88		81	22	-2.8526
BMU	6	1.46	4.83	-0.28	2.94	0.9603	30	51	0.4966
BWA	20	8.50	4.83	0.13	-3.06	0.0000	75	82	0.0000
BRA	60	11.09	9.14	-0.06	-3.27		82	87	0.0000
BRN	28	1.46	3.91	-0.28	2.01	3.3474	18	23	0.7206
BGR	100	3.57	3.64	1.83	1.74	0.0774	41	19	-3.2237
CAN	134	6.30	3.52	4.56	1.59	0.0004	65	70	-0.0394
CYM		1.46	4.83	-0.28	2.94	0.9605	29	50	0.4967
CHL	62	6.02	3.32	2.77	1.24		83	61	-0.1375
CHN	136	6.54	3.97	-0.08	2.40	0.0015	62	71	-0.0375
COL	22	5.85	9.82	4.49	-2.51		84	77	-0.0025
CRI	6	16.18	33.38	-0.07	2.06		85	88	0.0000
HRV	92	6.10	21.84	4.37	2.28		86	89	0.0000
CUW	6	1.46	4.83	-0.28	2.94	10.3917	3	35	8.3762
CYP	82	1.34	4.16	-0.40	2.26	2.3258	22	24	-0.2769
CZE	130	5.16	3.59	3.41	1.69	0.0097	52	30	-2.2426
DNK	110	1.35	3.53	-0.40	1.62	2.4954	21	7	-5.3615
DOM	4	10.81	30.52	9.18	2.14		87	90	0.0000
ECU		1.46	4.84	-0.28	2.94	21.9259	2	26	19.4211
EGY	82	1.45	8.36	-0.30	6.46		88	55	-0.3537
GNQ		25.81	38.14	0.11	1.91		89	91	0.0000
EST	90	1.34	4.18	-0.40	2.28	3.8339	15	5	-5.1040
FIN	112	3.56	3.16	1.82	1.26		90	6	-8.4693
FRA	140	1.29	2.80	-0.43	0.84	0.1843	36	20	-2.7679
GAB	8	20.39	4.83	4.34	2.94		91	92	0.0000
DEU	122	3.74	3.79	1.97	1.80	0.0028	60	28	-2.4022
GRC	92	5.17	4.17	3.43	2.26	0.0000	72	38	-1.9284
GRN		1.46	4.83	-0.28	2.94	0.9653	24	47	0.4961
HKG	68	1.47	3.63	-0.28	1.72	6.6061	7	36	4.6130
HUN	120	1.35	3.62	-0.40	1.72	3.2662	19	10	-3.4289

ISL	78	5.09	4.16	3.34	2.26	0.0019	61	39	-1.9201
IND	126	1.34	4.35	0.15	-3.97	3.5460	16	65	3.4694
IDN	96	11.18	4.15	4.59	2.10	0.0007	64	76	-0.0026
IRL	118	3.44	3.61	1.69	1.70	0.0065	57	18	-3.4272
IMN	18	1.46	4.83	-0.28	2.94	0.9113	33	52	0.4477
ISR	90	10.06	3.75	8.32	1.84		92	27	-2.4542
ITA	128	5.25	4.51	3.48	2.56		93	41	-1.0840
JAM	30	19.30	18.09	12.69	16.02		94	93	0.0000
JPN	106	6.29	5.27	4.56	1.51		95	64	-0.0799
JRY	4	1.46	4.83	-0.28	2.94	0.9650	25	48	0.4960
JOR		1.46	4.84	-0.28	2.94	6.6889	6	44	5.7936
KAZ	82	8.75	3.89	7.01	1.99	0.0000	74	72	-0.0363
KOR	132	20.88	3.37	0.12	1.83		96	94	0.0000
KWT	64	1.44	17.91	-0.28	1.30		97	95	0.0000
LVA	92	1.34	2.86	-0.40	0.96	3.8585	13	4	-5.3375
LBN		1.46	4.84	-0.28	2.94	4.6451	10	75	4.6258
LBY		1.46	9.59	-0.28	2.79	0.1170	39	96	0.1170
LIE	26	1.46	4.56	-0.28	2.66	0.9602	31	45	0.2205
LTU	88	7.09	4.05	5.35	2.15	0.0000	73	25	-2.5348
LUX	124	1.34	3.19	-0.20	1.29	0.0206	49	9	-6.9407
MAC	4	1.46	16.26	-0.28	2.59		98	97	0.0000
MYS	100	1.45	3.68	-0.30	1.78	4.6192	11	13	-0.4253
MLT	120	1.28	4.02	-0.20	2.13	7.0254	5	15	2.7437
MUS	52	1.46	4.83	-0.28	2.93	0.9617	27	42	-0.0683
MEX	118	5.57	32.11	4.30	0.77		99	98	0.0000
MNG	44	9.72	4.96	3.10	2.90		100	99	0.0000
NAM		1.42	13.06	-0.22	1.98		101	100	0.0000
NLD	128	1.33	2.71	-0.41	0.79	3.8514	14	2	-7.3847
NZL	70	12.31	3.29	10.57	-2.08		102	62	-0.1109
NGA	32	10.57	9.80	2.01	2.21	0.0000	76	83	0.0000
NOR	118	5.03	3.13	3.28	1.23	0.0078	55	29	-2.2674
OMN	46	11.32	3.88	-0.25	2.00	0.0279	47	67	-0.0404
PAK	88	10.54	32.72	4.15	1.40		103	101	0.0000
PAN	32	11.15	4.81	5.50	2.91	0.0000	68	78	0.0000
PER	16	6.06	10.09	0.14	2.23	0.0448	44	102	0.0448
PHL	2	11.04	9.11	3.06	1.25	0.1493	38	103	0.1493
POL	112	5.20	3.63	3.45	1.72	0.0034	59	40	-1.5106
PRT	122	6.86	3.30	5.19	1.40	0.0000	77	31	-2.2473
PRI		15.92	4.82	0.12	2.94	0.0000	69	80	0.0000
QAT	90	1.46	3.74	-0.28	1.84	6.2870	8	21	3.3749
ROM	114	5.18	3.58	3.44	1.68	0.0372	45	17	-3.4947
RUS	118	8.01	4.44	6.24	2.51	0.0094	53	54	-0.3551
SAU	66	1.32	22.97	-0.28	1.43		104	104	0.0000
YUG		20.96	4.82	0.11	2.94		105	105	0.0000
SYC	36	1.46	4.80	-0.28	2.90	0.0074	56	59	-0.2414
SGP	128	1.47	3.64	-0.28	1.74	5.2154	9	11	-1.3459

SVK	106	1.34	8.03	-0.40	6.14	0.7043	34	12	-5.4968
SVN	92	5.19	3.28	3.45	1.38	0.0000	70	32	-2.0830
ZAF	116	6.27	3.73	4.58	1.83	0.0061	58	33	-2.0719
ESP	138	1.31	3.26	-0.33	1.33	0.1810	37	16	-4.0259
SUR		8.85	4.83	-0.26	2.94		106	106	0.0000
SWE	124	1.35	2.80	-0.40	0.89	0.0241	48	3	-9.7834
CHE	132	1.35	2.39	-0.40	0.48	0.0161	50	8	-6.9575
TWN		10.97	3.97	4.29	2.13	0.9623	26	81	0.9622
THA	92	11.18	4.36	0.18	2.51	0.0916	40	68	0.0303
TTO	32	10.01	4.83	8.28	2.77	0.0090	54	66	-0.0625
TUN	72	6.18	28.63	4.48	2.20		107	107	0.0000
TUR	116	6.37	4.09	-0.30	2.23	0.0000	71	74	-0.0193
UKR	106	6.19	4.70	4.44	2.81	0.0583	42	57	-0.2530
ARE	110	1.47	3.58	-0.28	1.67	9.0803	4	14	4.5494
GBR	144	1.38	2.88	-0.42	0.92	24.0462	1	1	9.2486
USA	86	2.08	3.94	-0.41	1.40	0.6723	35	46	0.0756
URY	36	7.84	4.82	6.12	2.92	0.0451	43	63	-0.0458
VEN	2	1.40	12.36	-0.23	1.02	3.0969	20	60	2.9299
VIR		12.25	18.90	-0.07	0.95		108	108	0.0000
VGB	2	1.46	4.83	-0.28	2.94	0.9610	28	49	0.4968

Annex B.4 EU wide prohibitive penalty

CTR	LINKS	REPATRIATION TAX				CENTRALIY			
		MCNT	SHOPOUT	SHOPIN	DIFOUT	DIFIN	VALUE	RANK	RANK REF
ALB	30	6.69	3.28	4.95	1.38	0.0780	36	69	0.0206
DZA	30	1.87	26.20	0.17	1.74		55	84	0.0000
AGO	30	10.96	34.87	0.15	3.55		56	85	0.0000
ARG	30	11.65	14.18	0.15	0.78		57	86	0.0000
ABW	30	11.44	6.85	4.85	4.96	0.0000	53	79	0.0000
AUS	30	1.89	4.78	0.17	2.85	25.4835	2	34	23.4432
AUT	136	6.85	2.09	5.10	0.18		58	37	-1.9918
AZE	30	8.50	3.83	1.85	1.93	0.0155	46	73	-0.0160
BHS	30	1.91	6.96	0.17	5.06	0.6910	28	53	0.2278
BHR	30	1.65	5.31	0.17	3.42	1.1389	15	43	0.2358
BRB	30	1.91	5.48	0.17	3.58	1.0286	18	56	0.6943
BLR	30	1.91	3.84	0.17	1.94	0.3144	31	58	0.0584
BEL	136	5.05	3.35	3.42	1.44		59	22	-2.8526
BMU	30	1.91	6.96	0.17	5.06	0.6918	26	51	0.2281
BWA	30	8.52	10.99	0.16	3.09	0.0000	50	82	0.0000
BRA	30	11.30	14.07	0.16	1.65		60	87	0.0000
BRN	30	1.91	6.97	0.17	5.08	5.8044	6	23	3.1776
BGR	136	7.43	2.08	5.69	0.18		61	19	-3.3010
CAN	30	6.51	3.91	4.76	1.97	0.0562	38	70	0.0164
CYM	30	1.91	6.96	0.17	5.06	0.6920	25	50	0.2281
CHL	30	3.47	5.19	0.22	3.12	0.6972	23	61	0.5598
CHN	30	6.81	3.68	0.19	2.11	0.0418	41	71	0.0029
COL	30	2.96	14.87	1.60	2.54	0.0014	48	77	-0.0011
CRI	30	16.39	34.21	0.14	2.89		62	88	0.0000
HRV	30	1.90	20.50	0.17	0.94		63	89	0.0000
CUW	30	1.91	6.96	0.17	5.06	4.0232	9	35	2.0078
CYP	136	18.31	2.08	16.57	0.18		64	24	-2.6027
CZE	136	6.95	2.09	5.20	0.18		65	30	-2.2524
DNK	136	6.09	1.96	4.35	0.06		66	7	-7.8569
DOM	30	10.83	31.85	9.20	3.46		67	90	0.0000
ECU	30	1.91	5.45	0.17	3.55	6.3993	5	26	3.8945
EGY	30	1.92	5.12	0.17	3.21	1.0551	16	55	0.7013
GNQ	30	25.83	39.52	0.13	3.29		68	91	0.0000
EST	136	3.56	1.95	1.82	0.06		69	5	-8.9379
FIN	136	5.44	2.08	3.70	0.18		70	6	-8.4693
FRA	136	4.67	3.42	2.94	1.46		71	20	-2.9523
GAB	30	19.71	6.36	3.65	4.47		72	92	0.0000
DEU	136	6.94	3.33	5.17	1.34		73	28	-2.4050
GRC	136	10.23	2.09	8.48	0.18		74	38	-1.9284
GRN	30	1.91	6.95	0.17	5.06	0.7122	21	47	0.2430
HKG	30	1.92	4.61	0.17	2.70	5.2732	8	36	3.2801

HUN	136	6.54	2.08	4.79	0.18		75	10	-6.6951
ISL	136	8.24	2.08	6.49	0.18		76	39	-1.9219
IND	30	1.37	9.67	0.17	1.35	0.1671	34	65	0.0905
IDN	30	6.76	4.52	0.16	2.46	0.0153	47	76	0.0120
IRL	136	9.27	2.09	7.52	0.18		77	18	-3.4337
IMN	30	1.91	6.96	0.17	5.06	0.6916	27	52	0.2280
ISR	30	6.63	3.33	4.88	1.43	0.2864	32	27	-2.1678
ITA	136	8.04	3.19	6.27	1.25		78	41	-1.0840
JAM	30	10.38	9.79	3.76	7.72		79	93	0.0000
JPN	30	1.91	6.12	0.18	2.36	0.6880	29	64	0.6081
JRY	30	1.91	6.95	0.17	5.06	0.7119	22	48	0.2429
JOR	30	1.91	15.21	0.17	13.31	0.9795	19	44	0.0842
KAZ	30	6.73	4.26	4.99	2.36	0.0182	45	72	-0.0181
KOR	30	20.90	3.57	0.14	2.03		80	94	0.0000
KWT	30	1.89	17.60	0.17	0.98		81	95	0.0000
LVA	136	5.15	2.08	3.40	0.18		82	4	-9.1960
LBN	30	1.91	7.35	0.17	5.45	0.0247	44	75	0.0054
LBY	30	1.91	14.46	0.17	7.65	0.0520	39	96	0.0520
LIE	30	1.91	5.27	0.17	3.38	0.7262	20	45	-0.0135
LTU	136	8.73	2.08	6.99	0.18		83	25	-2.5349
LUX	136	2.56	2.08	1.01	0.18		84	9	-6.9613
MAC	30	1.91	18.09	0.17	4.42		85	97	0.0000
MYS	30	1.92	3.15	0.17	1.25	26.3808	1	13	21.3363
MLT	136	17.54	1.95	16.06	0.06		86	15	-4.2817
MUS	30	1.91	4.27	0.17	2.37	2.7708	11	42	1.7407
MEX	30	1.44	32.09	0.17	0.74		87	98	0.0000
MNG	30	6.78	6.67	0.16	4.61		88	99	0.0000
NAM	30	6.45	15.70	4.81	4.62		89	100	0.0000
NLD	136	3.95	2.08	2.20	0.17		90	2	-11.2361
NZL	30	1.91	7.91	0.17	2.53	2.4641	12	62	2.3533
NGA	30	8.72	10.63	0.16	3.05	0.0000	51	83	0.0000
NOR	136	11.35	2.09	9.60	0.18		91	29	-2.2752
OMN	30	11.72	4.57	0.15	2.68	0.0276	42	67	-0.0407
PAK	30	6.55	32.94	0.16	1.62		92	101	0.0000
PAN	30	5.81	5.52	0.16	3.62	0.0000	52	78	0.0000
PER	30	6.09	11.80	0.16	3.94		93	102	0.0000
PHL	30	11.26	9.04	3.28	1.18		94	103	0.0000
POL	136	7.64	2.09	5.89	0.19		95	40	-1.5140
PRT	136	7.82	2.09	6.15	0.18		96	31	-2.2473
PRI	30	15.94	6.95	0.14	5.07	0.0000	54	80	0.0000
QAT	30	1.91	4.65	0.17	2.75	5.3253	7	21	2.4132
ROM	136	7.06	2.09	5.31	0.18		97	17	-3.5319
RUS	30	1.94	3.25	0.17	1.32	2.2885	13	54	1.9240
SAU	30	1.76	23.58	0.17	2.05		98	104	0.0000
YUG	30	20.98	6.96	0.14	5.08		99	105	0.0000
SYC	30	1.91	6.76	0.17	4.86	1.0493	17	59	0.8005

SGP	30	1.92	3.08	0.17	1.18	13.0327	3	11	6.4713
SVK	136	3.07	5.61	1.33	3.71		100	12	-6.2010
SVN	136	7.21	2.08	5.47	0.18		101	32	-2.0830
ZAF	30	1.86	3.31	0.17	1.41	2.9203	10	33	0.8423
ESP	136	8.62	2.09	6.98	0.16		102	16	-4.2069
SUR	30	20.42	6.88	11.31	4.98		103	106	0.0000
SWE	136	5.28	1.96	3.53	0.05		104	3	-9.8075
CHE	136	6.55	2.08	4.79	0.17		105	8	-6.9736
TWN	30	6.84	5.36	0.16	3.53	0.0001	49	81	0.0001
THA	30	11.15	4.69	0.15	2.83	0.0488	40	68	-0.0124
TTO	30	9.78	4.75	8.06	2.69	0.0894	35	66	0.0180
TUN	30	1.87	28.60	0.17	2.17		106	107	0.0000
TUR	30	6.83	3.84	0.16	1.98	0.0255	43	74	0.0062
UKR	30	6.57	3.08	4.83	1.18	0.2797	33	57	-0.0316
ARE	30	1.92	3.17	0.17	1.26	9.4399	4	14	4.9090
GBR	136	3.41	2.16	1.61	0.19		107	1	-14.7976
USA	30	2.73	3.58	0.24	1.04	1.7971	14	46	1.2004
URY	30	6.36	5.32	4.65	3.43	0.0700	37	63	-0.0209
VEN	30	1.80	11.90	0.17	0.56	0.6528	30	60	0.4858
VIR	30	12.47	19.83	0.15	1.88		108	108	0.0000
VGB	30	1.91	6.96	0.17	5.06	0.6925	24	49	0.2283

Annex B.5 OECD – IF prohibitive penalty

CTR	LINKS	REPATRIATION TAX				CENTRALIY			
		MCNT	SHOPOUT	SHOPIN	DIFOUT	DIFIN	VALUE	RANK	RANK REF
ALB	68	11.20	14.14	9.46	12.25	0.07	27	69	0.01
DZA	68	10.15	34.43	8.45	9.96		51	84	0.00
AGO	68	11.02	42.57	0.21	11.25		52	85	0.00
ARG	74	31.63	18.98	20.14	5.58		53	86	0.00
ABW	68	24.79	17.84	18.20	15.94	0.00	45	79	0.00
AUS	214	9.07	7.16	7.35	5.23		54	34	-2.04
AUT	214	6.85	5.57	5.10	3.67		55	37	-1.99
AZE	68	9.67	14.41	3.02	12.52	0.01	35	73	-0.02
BHS	68	16.81	17.95	15.07	16.05	0.40	11	53	-0.06
BHR	94	16.49	16.20	15.01	14.30	0.37	13	43	-0.53
BRB	94	25.22	9.87	23.48	7.97	0.00	48	56	-0.33
BLR	70	8.70	14.71	6.95	12.81	0.43	7	58	0.17
BEL	214	5.05	5.12	3.42	3.21		56	22	-2.85
BMU	74	16.81	17.95	15.07	16.05	0.37	14	51	-0.10
BWA	80	8.58	19.01	0.21	11.11	0.00	43	82	0.00
BRA	84	14.22	19.24	3.07	6.83		57	87	0.00
BRN	88	2.56	16.95	0.82	15.05	0.38	12	23	-2.25
BGR	110	4.56	5.53	2.82	3.63	0.02	33	19	-3.28
CAN	214	8.59	7.82	6.85	5.88		58	70	-0.04
CYM	68	16.81	17.95	15.07	16.05	0.40	10	50	-0.06
CHL	214	22.12	15.34	18.87	13.27		59	61	-0.14
CHN	136	9.62	8.55	3.01	6.98	0.00	40	71	-0.04
COL	72	5.94	20.52	4.58	8.19		60	77	0.00
CRI	68	28.70	41.90	12.45	10.58		61	88	0.00
HRV	102	9.52	28.90	7.79	9.34		62	89	0.00
CUW	70	2.27	17.95	0.53	16.05	2.22	2	35	0.21
CYP	104	11.98	6.46	10.24	4.56	0.16	22	24	-2.44
CZE	214	6.95	5.50	5.20	3.60		63	30	-2.25
DNK	214	6.09	4.31	4.35	2.40		64	7	-7.86
DOM	68	10.89	39.77	9.26	11.38		65	90	0.00
ECU	68	2.17	15.84	0.43	13.94	3.00	1	26	0.50
EGY	106	6.82	12.05	5.07	10.14		66	55	-0.35
GNQ	68	25.87	46.66	0.17	10.43		67	91	0.00
EST	214	3.56	7.24	1.82	5.34		68	5	-8.94
FIN	214	5.44	4.05	3.70	2.15		69	6	-8.47
FRA	214	4.67	4.49	2.94	2.53		70	20	-2.95
GAB	68	20.42	17.14	4.37	15.25		71	92	0.00
DEU	214	6.94	4.43	5.17	2.44		72	28	-2.41
GRC	214	10.23	13.63	8.48	11.73		73	38	-1.93
GRN	68	16.81	17.94	15.07	16.04	0.40	8	47	-0.07
HKG	100	16.81	13.98	15.06	12.08	0.74	4	36	-1.25
HUN	214	6.54	6.56	4.79	4.66		74	10	-6.70

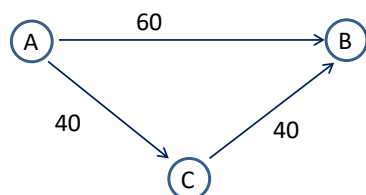
ISL	214	8.24	7.31	6.49	5.42		75	39	-1.92
IND	128	1.43	12.68	0.24	4.35	0.03	31	65	-0.05
IDN	110	11.61	8.98	5.02	6.93	0.01	38	76	0.00
IRL	214	9.27	5.79	7.52	3.89		76	18	-3.43
IMN	78	16.81	17.95	15.07	16.05	0.32	17	52	-0.14
ISR	214	12.58	9.92	10.83	8.01		77	27	-2.45
ITA	214	8.04	7.42	6.27	5.48		78	41	-1.08
JAM	74	19.33	19.62	12.71	17.55		79	93	0.00
JPN	214	6.36	8.58	4.64	4.82		80	64	-0.08
JRY	72	16.81	17.94	15.07	16.04	0.36	15	48	-0.11
JOR	68	2.29	27.26	0.54	25.36	0.74	5	44	-0.16
KAZ	100	8.79	7.42	7.05	5.52	0.00	50	72	-0.04
KOR	214	21.01	8.03	0.25	6.49		81	94	0.00
KWT	102	2.53	25.51	0.80	8.89		82	95	0.00
LVA	98	2.25	4.68	0.51	2.78	0.31	19	4	-8.89
LBN	68	21.48	22.67	19.73	20.77	0.11	25	75	0.09
LBY	68	2.44	29.36	0.70	22.56	0.05	29	96	0.05
LIE	78	16.75	16.26	15.01	14.36	0.25	21	45	-0.49
LTU	96	7.81	5.95	6.07	4.05	0.00	49	25	-2.53
LUX	214	2.56	5.65	1.01	3.75		83	9	-6.96
MAC	68	16.76	27.76	15.02	14.09		84	97	0.00
MYS	116	1.96	12.22	0.21	10.32	0.12	24	13	-4.92
MLT	126	11.72	5.96	10.24	4.06	0.05	28	15	-4.23
MUS	106	16.75	15.23	15.01	13.33	0.13	23	42	-0.90
MEX	214	6.74	32.87	5.48	1.52		85	98	0.00
MNG	86	14.72	24.76	8.11	22.69		86	99	0.00
NAM	68	9.42	32.25	7.77	21.17		87	100	0.00
NLD	214	3.95	3.23	2.20	1.31		88	2	-11.24
NZL	214	13.28	10.63	11.54	5.26		89	62	-0.11
NGA	82	10.65	18.45	2.09	10.87	0.00	42	83	0.00
NOR	214	11.35	8.64	9.60	6.73		90	29	-2.28
OMN	90	11.90	14.08	0.33	12.19	0.02	32	67	-0.05
PAK	112	11.70	37.08	5.31	5.76		91	101	0.00
PAN	76	24.65	16.35	19.00	14.45	0.00	47	78	0.00
PER	72	6.15	19.80	0.22	11.94		92	102	0.00
PHL	68	15.48	13.36	7.50	5.49		93	103	0.00
POL	214	7.64	6.46	5.89	4.55		94	40	-1.51
PRT	214	7.82	6.58	6.15	4.68		95	31	-2.25
PRI	68	15.99	17.95	0.20	16.07	0.00	46	80	0.00
QAT	118	3.23	14.47	1.48	12.57	0.28	20	21	-2.63
ROM	120	5.68	6.49	3.93	4.59	0.02	34	17	-3.52
RUS	120	8.48	6.62	6.71	4.69	0.00	41	54	-0.36
SAU	96	5.17	31.35	3.57	9.82		96	104	0.00
YUG	68	21.03	17.95	0.19	16.08		97	105	0.00
SYC	100	24.21	17.74	22.47	15.85	0.01	39	59	-0.24
SGP	136	2.17	12.29	0.43	10.38	0.31	18	11	-6.25

SVK	214	3.07	12.85	1.33	10.95		98	12	-6.20
SVN	214	7.21	6.15	5.47	4.25		99	32	-2.08
ZAF	122	6.72	5.79	5.03	3.88	0.33	16	33	-1.75
ESP	214	8.62	7.15	6.98	5.22		100	16	-4.21
SUR	68	25.25	17.87	16.14	15.97		101	106	0.00
SWE	214	5.28	3.70	3.53	1.79		102	3	-9.81
CHE	214	6.55	4.09	4.80	2.18		103	8	-6.97
TWN	68	15.33	14.82	8.66	12.99	0.00	44	81	0.00
THA	102	11.39	9.55	0.39	7.70	0.08	26	68	0.02
TTO	78	10.09	15.20	8.36	13.14	0.01	36	66	-0.06
TUN	94	6.38	33.62	4.67	7.20		104	107	0.00
TUR	214	13.29	11.09	6.62	9.23		105	74	-0.02
UKR	112	7.65	7.01	5.90	5.11	0.03	30	57	-0.28
ARE	126	3.23	12.44	1.48	10.53	1.31	3	14	-3.22
GBR	214	3.41	3.49	1.61	1.52		106	1	-14.80
USA	214	10.73	6.49	8.25	3.95		107	46	-0.60
URY	80	7.92	16.23	6.20	14.34	0.01	37	63	-0.08
VEN	68	8.95	14.14	7.33	2.80	0.67	6	60	0.50
VIR	68	25.67	23.42	13.35	5.48		108	108	0.00
VGB	68	16.81	17.94	15.06	16.05	0.40	9	49	-0.06

Annex C: Double counting of flows

The network approach computes the optimal routes. Once these have been determined, we also know the use of each individual link in the network. Link use combines the direct use of a link for a given pair of countries and its possible treaty shopping use. It must be observed that indirect routing leads to some double counting of flows. Consider the repatriation of 100 units from source jurisdiction A to residence country B; the total outgoing flow is 100, as is the total incoming flow. Now consider a diversion of 40% through a conduit country C, see figure C.1. By adding the outgoing flows over all countries a total of 140 is found whereas only a 100 left country A and arrived in B.

Figure C.1: Double counting of flows; $\text{out} = 60 + 40 + 40 = 140 = \text{in}$



Similar double counting occurs in the case of re-exports. Also the statistics of Foreign Direct Investment (FDI), based on reporting of the immediate countries of origin and destination, suffer from inflation of size by double counting.

In the 2018 baseline we find an overall factor of double counting of 291. This is like an index where 100 is the size of the flows without diversion. Hence in the baseline the diversion is almost two times (200%) of the initial undiverted flows. In the last scenario (*Strong*) the double counting factor is 114; only 14% diversion.

Table C.1: Policy scenarios and the Double Counting Index

Scenario	Double Counting Index
0. <i>Baseline 2018</i>	292
1. <i>Denmark unilateral</i>	291
2. <i>EU-wide</i>	249
3. <i>Inclusive Framework</i>	256
4. <i>EU-wide (p.p.)</i>	249
5. <i>OECD-IF (Strong)</i>	114

The diversion of flows for optimal routes can be seen as an indicator for the size of the market for conduit services. We observe that over the set of scenarios, with more countries and treaties included, the double counting index rapidly falls. Especially in the last scenario there are far less flows diverted, suggesting a small market for conduit services. Nevertheless, the question is still whether countries and in particular the remaining conduit countries have an incentive to refrain from the benefits of being a conduit country. If many treaty shopping routes are not beneficial any longer these benefits will erode and it could become easier to join the OECD and Inclusive Framework on BEPS programme. On the other hand, countries could also choose to lower their withholding taxes as a way of becoming more attractive as conduit countries.