# O.E.C.D. DISCUSSION DRAFTS ISSUED REGARDING BEPS ACTION 2 – NEUTRALIZING THE EFFECTS OF HYBRID MISMATCH ARRANGEMENTS

Author Stanley C. Ruchelman

Tags B.E.P.S. O.E.C.D. Double Deduction

### INTRODUCTION

1

2

On March 19, 2014, the O.E.C.D. issued two discussion drafts proposing steps to neutralize abusive tax planning through hybrid mismatch arrangements. One report proposed changes in domestic law;<sup>1</sup> the second proposed changes to the O.E.C.D. Model Tax Convention.<sup>2</sup>

The discussion drafts reflect the O.E.C.D.'s attempt to bring "zero-sum game" concepts to global tax planning. In a zero-sum game, transactions between two or more parties must always equal zero (*i.e.*, if one party to a transaction recognizes positive income of "X" and pays tax on that amount, the other party or parties generally must recognize negative income of the same amount, thereby reducing tax to the extent permitted under law). Seen from the viewpoint of the government, tax revenue is neither increased nor decreased on a macro basis if timing differences are disregarded.

If all transactions are conducted within one jurisdiction, the government is the ultimate decision maker as to the exceptions to the zero-sum analysis. For policy reasons, a government may decide to make an exception to a zero-sum game result by allowing the party reporting positive income to be taxed at preferential rates or not at all, while allowing the party reporting negative income to fully deduct its payment. But, when transactions cross borders and involve related parties, taxpayers have a say in what is taxed and what is not taxed.

From a global tax revenue perspective, the transaction can move from a zero-sum to a double negative sum in a way that is fully compliant with the laws of each country. Tax advisers receive bonuses when these results are achieved and investors applaud. The O.E.C.D. views this as abusive and proposes changes in domestic law and income tax treaties to end the practice.

See <u>http://www.oecd.org/ctp/aggressive/hybrid-mismatch-arrangements-</u> discussion-draft-domestic-laws-recommendations-march-2014.pdf.

See <u>http://www.oecd.org/ctp/treaties/hybrid-mismatch-arrangements-</u> discussion-draft-treaty-issues-march-2014.pdf.

### DOMESTIC LAW PROPOSALS

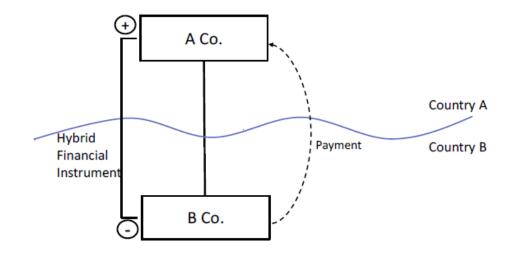
Hybrid mismatch arrangements incorporate techniques that exploit a difference in the characterization of an entity or an arrangement under the laws of two or more tax jurisdictions to produce a mismatch in tax outcomes. The B.E.P.S. Action Plan calls for the adoption of domestic rules that are designed to put an end to these arrangements.

Three mismatch arrangements are targeted by the proposal. They are: (a) hybrid financial instrument, (b) hybrid entity payments, and (c) reverse hybrid and imported mismatch arrangements. Those advisers who regularly plan for cross-border mergers, acquisitions, and financings should be familiar with each planning technique.

#### **Hybrid Financial Instruments**

These are transactions where a payment is made under a financial instrument. The payor claims a deduction in its jurisdiction of residence, but payment is not subject to withholding tax, and the related recipient is treated in its jurisdiction of residence as if no taxable income is received.

A simplified mismatch arrangement is illustrated by the following diagram:



In the illustration, B Co. (an entity resident in Country B) issues a hybrid financial instrument to A Co. (an entity resident in Country A). The instrument is treated as debt for the purposes of Country B law, and Country B grants a deduction for interest payments made under the instrument, while Country A law grants some form of tax relief (an exemption, exclusion, indirect tax credit, etc.) in relation to the interest payments received under that instrument. Hence, the zero-sum game result is disrupted.

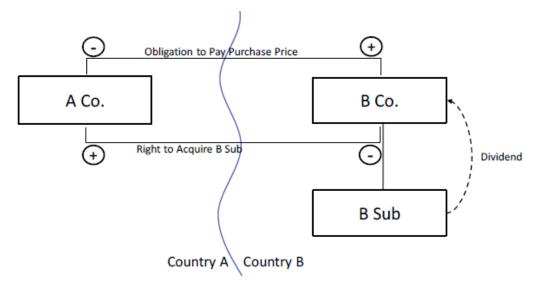
The mismatch may be due to any of several reasons. Most commonly the financial instrument is treated by the issuer as debt (which is a claim against the issuer) and by the holder as equity (which is an investment in the issuer). This difference in characterization can result in a payment that is treated as a deductible by the issuer and a dividend by the recipient. If the recipient is entitled to a dividends-received

deduction or the dividend corresponds with the entity's foreign tax credit planning, no tax is imposed on the recipient or it may reduce tax otherwise due on global income through the maximization of credits. Again, implicit in the proposal is the exemption from withholding tax allowed when payment is made.

Other planning techniques may result in the mismatch of tax outcomes. These techniques may result from specific differences in the tax treatment of a particular payment made under the instrument. Examples include:

- A subscription or sale of shares with a deferred purchase price component that is treated as giving rise to a deductible expense for the share subscriber and a non-taxable receipt for the share issuer;
- A deduction claimed by an issuer for the premium paid on converting a mandatory convertible note, while the holder of the note treats the premium as an exempt gain;
- An issuer that claims a deduction for the value of an embedded option in an optional convertible note, while the holder ignores the value of the option component (or gives it a lower value than the issuer);
- An issuer that bifurcates an interest-free shareholder loan into its equity and debt components and then accrues the equity component over the life of the loan, while the holder treats the entire amount as a loan for the principal sum.

Hybrid transfers are often cast as collateralized loan arrangements or derivative transactions where the counterparties to the same arrangement are located in different jurisdictions and each treats itself as the owner of the loan collateral or the subject matter of the derivative. A typical example is a sale and repurchase arrangement (generally referred to as a "repo") where the terms of the repo make it the economic equivalent of a collateralized loan. Nonetheless, one jurisdiction treats the arrangement in accordance with its form (a sale and a repurchase of the asset), while the counterparty jurisdiction taxes the arrangement in accordance with its economic substance (a loan with the asset serving as collateral). This is illustrated in the following diagram:



In the example, a company in Country A (A Co.) owns a subsidiary (B Sub). A Co. sells the shares of B Sub (or a class of shares in B Sub) to B Co. under an arrangement that calls upon A Co. (or an affiliate) to acquire those shares at a future date for an agreed price. Between the sale and repurchase, B Sub earns income, pays tax, and makes distributions on the shares to B Co.

Country B taxes the arrangement in accordance with its form. Accordingly, B Co. is treated as the owner of the B Sub shares and entitled to receive and retain the dividends paid by B Sub during the life of the repo. Country B will typically grant a credit, exclusion, exemption or some other tax relief to B Co. on the dividends received. B Co. also treats the transfer of the shares back to A Co. as a genuine sale of shares and may exempt any gain on disposal under an equity participation exemption or a general exclusion for capital gains.

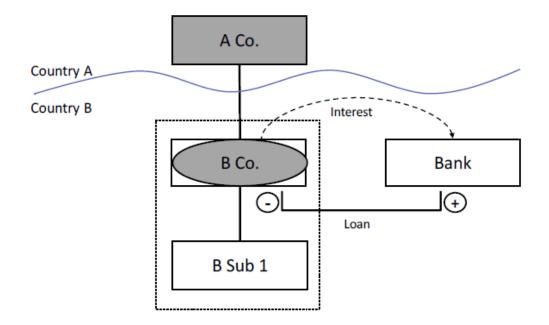
In accordance with its economic substance, for Country A tax purposes, the transaction is treated as a loan by B Co. to A Co. that is secured through a pledge of shares in B Sub and effected through a temporary transfer of legal title. A Co. is thus regarded as being the owner of the B Sub shares with the corresponding entitlement to B Sub dividends during the life of the repo.

Because Country A treats A Co. as the owner of B Sub shares, it requires A Co. to include in its income the amount of any dividends paid by B Sub to B Co. However the income tax on dividends will generally be sheltered by a credit, exclusion, or other tax relief applicable to those dividends under the laws of Country A. The net cost of the repo to A Co. is treated as a deductible financing cost. This cost includes the dividends treated as economically derived by A Co. (which are paid to and retained by B Co. from B Sub), but for Country A purposes, they are treated as paid by A Co. to B Co. during the life of the repo. Because Country A treats A Co. as having paid the amount of the dividend across to B Co., Country A grants a deduction for the amount of the dividend paid to and retained by B Co.

The discussion draft proposes to neutralize the tax benefit under the foregoing mismatches through the adoption of a linking rule that would seek to align the tax outcomes for the payor and the recipient under a financial instrument. The primary response would be to deny the payor a deduction for payments made under the hybrid financial instrument. In the event the payor is located in a jurisdiction that does not apply the primary rule, the payment would be included in the income of the recipient when computing tax in its country of residence. In addition, the dividends-received deduction that applies to a corporate recipient of a dividend would not apply to payments that are deductible for the payor. Payments under hybrid instruments would be included within this rule.

#### Hybrid Entity Payments

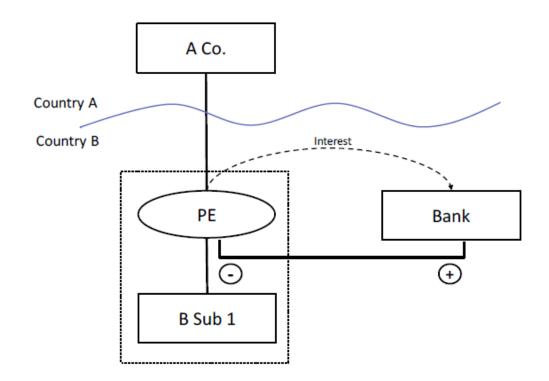
These are transactions where differences in the characterization of the hybrid payor result in either (a) a deductible payment being disregarded in the country of residence of the recipient or (b) the allowance of a deduction in another jurisdiction so that the payment is deducted twice, each time offsetting income taxed separately in one, but not both, jurisdictions. The most common double deduction hybrid technique involves the use of a hybrid subsidiary that is treated as transparent under the laws of the investor's tax jurisdiction and opaque under the laws of the jurisdiction where it is established or operates. An opaque entity is treated as an entity, but is entitled to benefits under an income tax treaty. This hybrid treatment can result in the same item of expenditure incurred by the hybrid



being deductible under the laws of both the investor and subsidiary jurisdictions, as illustrated in the following diagram:

In this example, A Co. holds all the shares of a foreign subsidiary (B Co.). B Co. is a hybrid entity that is disregarded for Country A tax purposes. B Co. borrows from a bank and pays interest on the Ioan. B Co. derives no other income. Because B Co. is disregarded, A Co. is treated as the borrower under the Ioan for the purposes of Country A's tax laws. The arrangement therefore gives rise to an interest deduction under the laws of both Country B and Country A. B Co. is consolidated, for tax purposes, with its operating subsidiary B Sub 1, which allows it to surrender the tax benefit of the interest deduction to B Sub 1. The ability to "surrender" the tax benefit through the consolidation regime allows the two deductions for the interest expense to be set-off against separate income arising in Country A and Country B.

The same structure can be used without involving a hybrid entity, provided the subsidiary jurisdiction allows permanent establishments to consolidate for tax purposes with other resident companies. The diagram below illustrates this structure:



If the consolidation regime in Country B treats the permanent establishment (PE) as if it were a local entity and permits the permanent establishment to "surrender" the tax benefit of the deduction to B Sub 1, the result is the same as in the preceding illustration. The equivalent interest expense can be set-off against separate income arising in Country A and Country B.

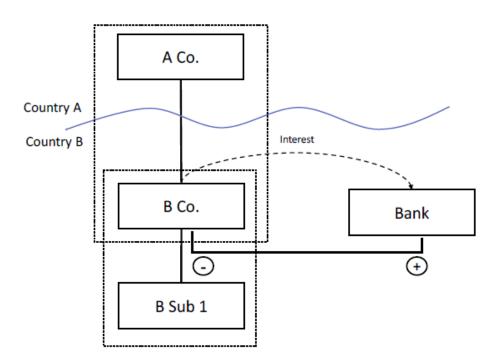
The double deduction outcome raises base erosion issues only when interest expense deduction is eligible to be set-off against income that is not subject to tax in the other jurisdiction. This effect can be demonstrated by assuming, in the above example, that B Co. (or PE) derives no income. In such a case the interest expense that is deemed to arise in Country A might then be set-off against A Co.'s in-country income, thus reducing the amount of tax payable under Country A law. It can also be surrendered to B Sub 1, allowing it to be used against income taxable only in Country B.

According to the discussion draft, the double deduction opportunity gives rise to tax policy concerns, from the perspective of the investor jurisdiction, for the following reasons:

- The hybrid entity is usually structured so that it never generates a net profit; this ensures that there is never sufficient dual inclusion income to eliminate the mismatch generated by the duplicate deduction.
- In the event the hybrid entity does begin to generate surplus dual inclusion income, the investor can simply restructure its holdings in the hybrid entity to prevent the surplus income from being included under the laws of the investor jurisdiction.

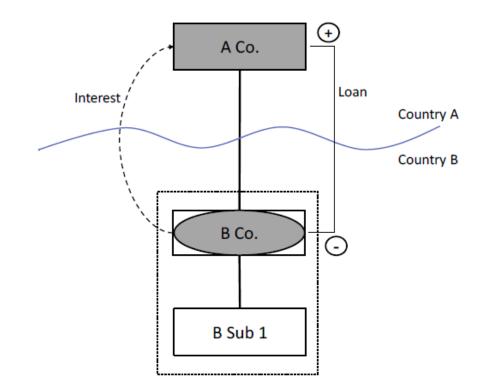
The loss surrender mechanism in the subsidiary jurisdiction can be used to make the mismatch in tax outcomes permanent. The surrendering of surplus deductions to non-hybrid entities means that the deduction will no longer be available to reduce any dual inclusion income that may be derived by the hybrid entity in the current or any subsequent period. Thus, any dual inclusion income derived by the hybrid in a subsequent period will be subject to tax under the laws of the subsidiary jurisdiction (Country B in the above examples) at the full rate, and such tax will be fully creditable under the laws of the investor jurisdiction (Country A in the above examples). The effect of the loss surrender under the consolidation regime therefore allows for each deduction to be set-off permanently against "other income," permanently eroding the tax base of the investor jurisdiction.

A similar hybrid effect can be achieved by orchestrating a structure where the entity, while not hybrid, is a member of more than one tax consolidation group. This is illustrated in the following diagram:



In the example, A Co. (a company incorporated and tax resident in Country A) holds all the shares in B Co. (a company incorporated in Country B but tax resident in both Country A and Country B). B Co. owns all the shares in B Sub 1 (a company incorporated and tax resident in Country B). B Co. is consolidated, for tax purposes, with both A Co. (under Country A law) and B Sub 1 (under B Country law). B Co. borrows from a bank and pays interest on the Ioan. B Co. derives no other income. Because B Co. is resident in both Country A and Country B, it is subject to tax on its worldwide income in both jurisdictions on a net basis and can surrender any net loss under the tax consolidation regimes of both countries to other resident companies. The ability to "surrender" the tax benefit through the consolidation regime in both countries allows the two deductions for the interest expense to be set-off against separate income arising in Country A and Country B.

The same basic hybrid technique can be used to engineer a deduction for a payment in the jurisdiction of residence of the payor without any income recognized in the jurisdiction of residence of the recipient. An example involves a payment made by a hybrid entity to its investor that is deductible under the laws of the payor's jurisdiction but disregarded under the laws of the investor's jurisdiction. This is illustrated in the following diagram:



Tax benefits are derived because B Co. is treated as transparent under the laws of Country A. Because A Co. is the only shareholder in B Co., Country A simply disregards the separate existence of B Co. Disregarding B Co. means that the loan and the accompanying interest on the loan are ignored under the laws of Country A. In many cases, the funds lent from A Co. to B Co. are sourced from external borrowing by A Co. The arrangement therefore gives rise to an interest deduction under the laws of Country B but no corresponding inclusion under the laws of Country A. This deduction is then eligible to be offset against the income of B Sub 1 under the group consolidation regime. The ability to surrender the loss through the consolidation regime allows the deduction to be set-off against separate income arising under Country B law, producing a double deduction when funds are externally sourced by A Co.

The discussion draft proposes to address the hybrid payment issue through a linking rule that focuses only on whether the payment gives rise to a deduction in the subsidiary jurisdiction that could be offset against dual inclusion income. The rule would also have a primary/secondary structure so as to require application in one jurisdiction rather than both.

The double deduction rule isolates the hybrid element in the structure by identifying a deductible payment made by a hybrid in the subsidiary jurisdiction. This is referred to as the "hybrid payment." It also identifies the corresponding "duplicate deduction" generated in the jurisdiction of the investor. The primary recommendation is that the duplicate deduction cannot be claimed in the investor jurisdiction to the extent it exceeds the claimant's dual inclusion income, which is income that is brought into account for tax purposes under the laws of both jurisdictions. A secondary recommendation applies to the hybrid in the subsidiary jurisdiction to prevent the hybrid claiming the benefit of a hybrid payment against non-dual inclusion income if the primary rule does not apply. For both rules, excess deductions can be carried forward by a taxpayer and offset against future dual inclusion income.

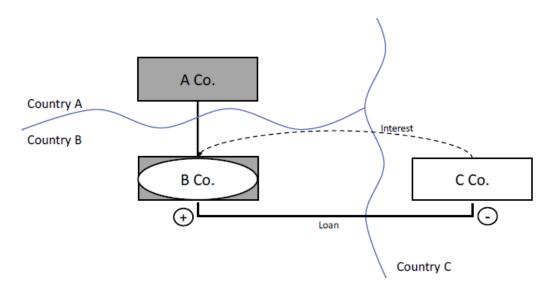
In order to prevent stranded losses, the discussion draft recommends that excess duplicate deductions should be allowed to the extent that the taxpayer can establish, to the satisfaction of the tax administration, that the deduction cannot be set-off against the income of any person under the laws of the other jurisdiction.

The deduction/non-inclusion rule defines a disregarded payment as one that is made cross-border to a related party where the tax treatment of the payor results in the payment being disregarded under the laws of the jurisdiction in which the recipient is resident. The deduction that is generated by a disregarded hybrid payment cannot exceed the taxpayer's dual inclusion income. As a secondary rule, the recipient would be required to include the excess deductions in income.

#### **Reverse Hybrid and Imported Mismatches**

Two arrangements are targeted by these rules. The first is an arrangement where differences in the characterization of the intermediary result in the payment being disregarded in both the intermediary jurisdiction and the investor's jurisdiction (reverse hybrids). The second is an arrangement where the intermediary is party to a separate hybrid mismatch arrangement, and the payment is set-off against a deduction arising under that arrangement (imported mismatches).

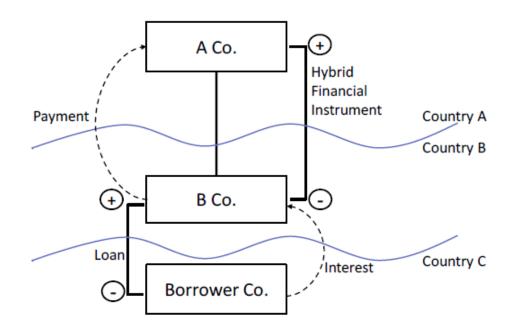
In the reverse hybrid arrangement, the hybrid is treated as opaque by its foreign owner and transparent under the jurisdiction where it is established. This is illustrated by the following diagram:



A Co. is a company resident in Country A, the investor jurisdiction. It owns all of the shares in B Co., a foreign subsidiary established under the laws of Country B, the intermediary jurisdiction. B Co. is treated as transparent for tax purposes under the laws of Country B but is regarded as a separate taxable entity under the laws of Country A. C Co., a company resident in Country C, the payor jurisdiction, borrows money from B Co. and makes interest payments under the loan. The payment is deductible under the laws of the payor jurisdiction, Country C, but is not included in income under the laws of either the investor or the intermediary jurisdiction because neither such jurisdiction treats the payment as income of a resident. Instead, each country treats the income as being derived by a resident of the other jurisdiction. This assumes that A Co. does not maintain a taxable presence in the intermediary jurisdiction. If it did (*e.g.*, to enable B Co. to act as a dependent agent), Country B might impose tax.

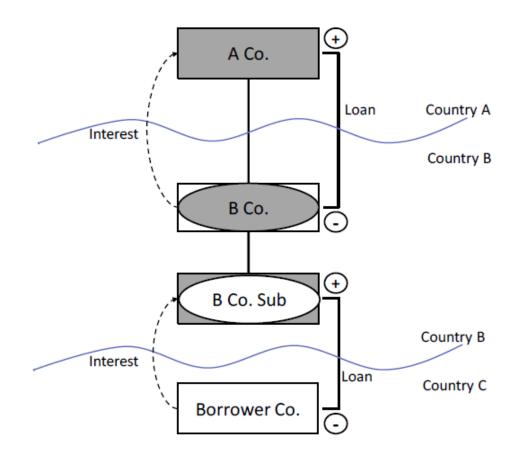
The mechanics of reverse hybrid structures also make it difficult for any party to the arrangement to know the nature and extent of the mismatch unless the arrangement is implemented within the confines of a controlled group. Reverse hybrids mismatches can arise in the context of widely-held investment vehicles that admit offshore investors.

In the imported mismatch system, a hybrid instrument is used to reduce or eliminate the income in the intermediary jurisdiction. The intermediary company then lends funds raised with the hybrid instrument in return for a note from a borrower in a third country. The following diagram illustrates the fact pattern:



B Co. is a wholly-owned subsidiary of A Co. A Co. lends money to B Co. in return for the issuance of a hybrid financial instrument. The payments are structured to be exempt from tax under the laws of Country A, while being deductible under the laws of Country B. Borrower Co. borrows money from B Co. Interest payable under the loan is deductible under the laws Country C (the jurisdiction of residence of Borrower Co.) and is included in income by B Co. under Country B law. The result of this structure is that interest is deductible in Country C, but ultimately is not deductible in Country A. Country B's tax revenue is unaffected as income is offset by deductions.

A similar result can be achieved through the use of a series of hybrid entities, as illustrated in the following diagram:



In the structure, A Co., a Country A resident, establishes a wholly-owned subsidiary B Co., a resident of Country B. B Co. is a hybrid that is treated as transparent under the laws of Country A. B Co. forms a wholly-owned subsidiary B Co. Sub. B Co. Sub is a "reverse hybrid" entity from the perspective of Country A. It is treated as transparent for tax purposes under the laws of Country B but as a separate taxable entity under the laws of Country A.

A Co. lends money to B Co. B Co. uses the money to acquire equity in B Co. Sub. B Co. Sub lends money to Borrower Co., an unrelated entity resident in Country C. Because Country A disregards the separate existence of B Co., it ignores the loan and the interest on the loan. This part of the structure therefore gives rise to an interest deduction under the laws of Country B but no corresponding inclusion under the laws of Country A. Interest payable under the loan between Borrower Co. and B Co. Sub is deductible under the laws of Country C and is included in income under Country B law. Country B treats B Co. Sub as a transparent entity

and will include its income in B Co.'s income. However, the income will be offset by the interest deduction under the loan arrangement between A Co. and B Co.

The net result of this structure is that Borrower Co. has a deduction, the income and expense of B Co. and B Co. Sub eliminate tax in Country B, and A Co. has no taxable income.

The discussion drafts propose the following rules to address the foregoing perceived abuses. In respect of imported mismatch arrangements other than reverse hybrids, comprehensive hybrid mismatch rules in the investor or the intermediary jurisdiction should be adopted that would be sufficient to prevent imported mismatches being structured through those jurisdictions. It proposes that all countries adopt the same set of hybrid mismatch rules. This approach ensures that the arrangement is neutralized in the jurisdiction where the hybrid technique is deployed, and there would be no resulting mismatch that could be exported into a third jurisdiction. A comprehensive solution where all countries establish the same set of hybrid mismatch rules establish the same set of hybrid mismatch rules and administration efficiencies and certainty of outcomes for taxpayers.

To address reverse hybrid structures and provide measures designed to protect the payor jurisdiction from imported mismatches, the discussion draft makes two recommendations. The first is the adoption of rules that require income of, or payments to, a reverse hybrid to be included in income under the laws of the investor jurisdiction. It would be supported by the adoption of rules requiring income of, or payments to, a reverse hybrid to be included under the laws of the intermediary jurisdiction, if not included under the laws of the investor jurisdiction. The second recommendation is the adoption of rules that would allow the payor jurisdiction to deny the deduction for payments made to an offshore structure including an imported mismatch structure or reverse hybrid where the parties to the mismatch are members of the same controlled group or the payor has incurred the expense as part of an avoidance arrangement.

# TREATY ISSUES

To supplement the detailed discussion draft of proposed changes to domestic law, a discussion draft was also published regarding changes in the O.E.C.D. Model Tax Convention.

The discussion draft proposes to change the Article 4 (Resident) paragraph (3) of the O.E.C.D. Model Tax Convention to address some of the B.E.P.S. concerns related to dual-resident entities. It will provide a revised method of allocating tax residence by adopting a case-by-case method, instead of the current place of effective management. In essence, it will likely prevent any single rule or approach from being controlling in all circumstances. Certainty of result is given second position to prevention of abuse.

Paragraph 3 of Article 4 would be modified to read as follows:

Where by reason of the provisions of paragraph 1 a person other than an individual is a resident of both Contracting States, the competent authorities of the Contracting States shall endeavour to determine by mutual agreement the Contracting State of which such person shall be deemed to be a resident for the purposes of the Convention, having regard to its place of effective management, the place where it is incorporated or otherwise constituted and any other relevant factors. In the absence of such agreement, such person shall not be entitled to any relief or exemption from tax provided by this Convention except to the extent and in such manner as may be agreed upon by the competent authorities of the Contracting States. [Emphasis supplied.]

The discussion draft acknowledges that the revision will not address all B.E.P.S. concerns related to dual-resident entities. Thus, an entity could be a resident of a given State under that State's domestic law while, at the same time, being a resident of another State under a tax treaty concluded by the first State. This would allow that entity to benefit from the advantages applicable to residents under domestic law – for example, being able to shift its foreign losses to another resident company under a group relief system – without being subject to reciprocal obligations regarding global taxation – it could claim treaty protection against taxation of its foreign profits. The draft suggests that countries adopt domestic legislation providing that an entity considered to be a resident of another State under a tax treaty will be deemed not to be a resident under domestic law.

The 1999 O.E.C.D. report on *The Application of the OECD Model Tax Convention to Partnerships* (the "Partnership Report") contains an extensive analysis of the application of treaty provisions to partnerships, including situations where there is a mismatch in the tax treatment of the partnership.<sup>3</sup> The discussion draft proposes to expand the scope of the Partnership Report to other transparent entities. Thus it proposes to modify Article 1 (Persons Covered) by inserting a new paragraph 2, providing as follows:

For the purposes of this Convention, income derived by or through an entity or arrangement that is treated as wholly or partly fiscally transparent under the tax law of either Contracting State shall be considered to be income of a resident of a Contracting State but only to the extent that the income is treated, for purposes of taxation by that State, as the income of a resident of that State.

The new text would be supported by the adoption of additional commentary. An example in the proposed commentary explains how the provision would be applied:

State A and State B have concluded a treaty identical to the Model Tax Convention. State A considers that an entity established in State B is a company and taxes that entity on interest that it receives from a debtor resident in State A. Under the domestic law of State B, however, the entity is treated as a partnership and the two members in that entity, who share equally all its income, are each taxed on half of the interest. One of the members is a resident of State B and the other one is a resident of a country with which

3

OECD (1999), *The Application of the OECD Model Tax Convention to Partnerships*, Issues in International Taxation, No. 6, OECD Publishing. doi: <u>10.1787/9789264173316-en</u>.

States A and B do not have a treaty. The paragraph provides that in such case, half of the interest shall be considered, for the purposes of Article 11, to be income of a resident of State B.

The proposed commentary explains that the reference to "income derived by or through an entity or arrangement" is to be given a broad meaning. It is intended to cover any income that is earned by or through an entity or arrangement, regardless of (a) the view taken by each Contracting State as to who derives that income for domestic tax purposes and (b) whether or not that entity or arrangement has legal personality or constitutes a person. It would cover income of any partnership or trust that one or both of the Contracting States treats as wholly or partly fiscally transparent. It does not matter where the entity or arrangement is established. The paragraph applies to an entity established in a third State to the extent that, under the domestic tax law of one of the Contracting States, the entity is treated as wholly or partly fiscally transparent and income of that entity is attributed to a resident of that State.

In the case of an entity or arrangement which is treated as partly fiscally transparent under the domestic law of one of the Contracting States, only part of the income of the entity or arrangement might be taxed at the level of the persons who have an interest in that entity or arrangement, as described in the preceding paragraph, whilst the rest would remain taxable at the level of the entity or arrangement. This provision is intended to apply to (a) trusts that are fiscally transparent when distributions are made from current income and (b) a separate taxpayer for accumulated income. To the extent that the trust qualifies as a resident of a Contracting State, the provision will ensure that the benefits of the treaty will also apply to the share of the income that is taxed at the trust level by the jurisdiction of residence.

The proposed paragraph does not prejudge whether the transparent entity or its members are the beneficial owners of the income. Thus, for example, a fiscally transparent partnership that receives dividends as an agent or nominee for a person who is not a partner does not preclude the State of source from considering that neither the partnership nor the partners are the beneficial owners of the dividend. The fact that the dividend may be considered as income of a resident of a Contracting State under the domestic law of that State is not controlling on the tax treatment of the source State.

# CONCLUSION

The discussion draft on hybrid entities is an ambitious attempt to limit tax planning that has existed for decades. Whether it can be implemented universally remains an open question.