Residual profit allocation by income

A paper of the Oxford International Tax Group chaired by Michael P. Devereux

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EXECUTIVE SUMMARY

This paper is a draft chapter of a forthcoming book on the taxation of international business profit by the authors of this paper, to be published by Oxford University Press. The group has been meeting regularly for five years, to identify and discuss the key problems of the existing international tax system, and to develop potential options for reform. The book will study two proposals for reform in depth. One is the destination-based cash flow tax – a draft chapter on this proposal has already been released.[1] The second proposal – for a form of residual profit allocation - is presented here.

This paper is largely self-standing and can be read without necessarily reading the rest of the book, although it does refer in places to arguments set out in other draft chapters. We hope to make these other chapters available shortly. We invite comments on the contents of the two draft chapters which have been made available; they can be made to the chair of the group, Michael Devereux,[2] or to any of the group members.

We refer to the proposal set out in this paper as a Residual Profit Allocation by Income, or RPA-I. It is one of a family of schemes based on separating the total profit of a multinational enterprise (MNE) into two parts – the "routine" profit and the "residual" profit. This distinction is familiar from the existing system in the context of profit splits. The proposal here goes considerably further than the existing system; nevertheless, it is based on existing features and concepts. As such, although the RPA-I would involve substantial departures from the existing system, we believe that the transition to it could be achieved broadly within the context of the existing system.

The RPA-I allocates the right to tax routine profit to the country where functions and activities take place. It allocates the right to tax residual profit to the market, or destination, country where sales are made to third parties.

We argue that the RPA-I has attractive properties – while it is far from perfect, it matches well the criteria by which we aim to evaluate proposals for tax reform: economic efficiency, fairness, robustness to avoidance, ease of implementation, and incentive compatibility. The RPA-I's superior performance under these criteria relative to the existing system stems primarily from allocating taxing rights for residual profit

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[1] Alan J. Auerbach, Michael P. Devereux, Michael J. Keen and John Vella (2017) "Destination-based cash flow taxation", Oxford University Centre for Business Taxation Working Paper 17/01.

[2] By email at michael.devereux@sbs.ox.ac.uk

to the destination country. The relative immobility of the third-party purchaser of goods and services sold by the company – especially in the case of individuals, rather than businesses – implies that the location of the taxation of residual profit is not easily manipulated. This is true of manipulation by shifting real economic activity – which creates economic distortions and hence inefficiencies – and also of the manipulation of the location of taxable profit. Thus the introduction of the RPA-I would be likely to result in a significant improvement in the performance of the existing system, both in terms of economic efficiency and robustness to avoidance.

Yet the RPA-I is based firmly on concepts employed by the existing system. "Routine" profit is the profit a third party would expect to earn for performing a particular set of functions and activities on an outsourcing basis. In this outsourcing model the third-party functions essentially as a service provider; it does not share in the overall risk of the MNE, and earns no return based on the overall success or failure of the product or business to which its activities relate. The routine profit for an affiliate would be based on the rate of profit earned by a comparable third party, applied to an appropriate cost base, although other transfer pricing approaches could also be used. In this sense, the RPA-I would not discriminate between activities that are undertaken within the business as opposed to outsourced to an independent business.

The residual profit of a MNE can be calculated in two ways. The first, bottom-up approach, identifies the residual gross income (RGI) earned in each destination country. This is measured as the value of sales to third parties in that jurisdiction, less the costs of goods sold, including expenses incurred in that country plus the transfer value of goods and services purchased from other parts of the MNE. The transfer value is based on the costs incurred in the relevant functions and activities of the selling party together with any routine profit associated with those costs. Costs that cannot be directly allocated to specific sales would then be apportioned to each destination country based on that country's share of total RGI, and the apportioned costs would be deducted to determine the residual profit in each destination country. This approach can be structured to yield identical results to a top-down approach by which the total residual income – calculated simply as total profit less total routine profit - is apportioned directly by RGI. The RPA-I would apply irrespective of the nature of the presence of the MNE in the destination country. Residual profit is allocated to destination countries whether there is a subsidiary, branch, or simply a remote sale there.

The RPA-I thus adheres to existing transfer pricing rules where they are generally deemed to work reasonably well (to calculate routine profit) and departs from these

rules in the context of residual profit, where these rules are generally deemed to struggle.

This RPA-I proposal differs from other RPA options proposed in the literature in two important ways. First, routine profit is determined by common transfer pricing techniques, instead of being based on a fixed mark-up over costs. That makes it more able to reflect the specific conditions faced by individual businesses and aims at neutrality of treatment between activities undertaken within the business and those outsourced to an independent business. Second, the apportionment of residual profit is based on the location of RGI, rather than sales. This has advantages in terms of both economic efficiency and robustness to avoidance.

Michael Graetz served as a member of the group until 2016. We would like to thank him for his many contributions to our deliberations, especially on the RPA-I proposal described here. Michael was not involved in the drafting of this Chapter.

I. INTRODUCTION

This chapter presents and analyses an alternative approach to the taxation of international business profit that we believe has significant advantages compared to current arrangements: the Residual Profit Allocation by Income (RPA-I).

The RPA-I is one of a family of Residual Profit Allocation (RPA) schemes that divide international business profit for tax purposes across countries in two steps.[3] In a first step, all business functions and activities within a multinational enterprise (MNE)—R&D activities, manufacturing, general and administrative activities, sales and marketing activities and others—would be allocated a "routine profit" and taxed in the countries where these functions and activities are performed. In a second step, the remaining "residual profit"—the MNE's total profit less the sum of routine profits across all countries—would be apportioned across countries according to some mechanical rule.

Options within this family of schemes vary most significantly in the manner in which routine profit is calculated for the first step, and the choice of location and apportionment rule for the second step. An important option, first proposed by Avi-Yonah, Clausing and Durst,[4] calculates routine profit through a fixed mark-up over costs and apportions residual profit to the market, or destination, country entirely by sales.[5] The RPA-I proposed in this chapter calculates routine profit using existing transfer pricing techniques. It also apportions residual profit to the destination country, though using as an apportionment formula not sales but 'residual gross income' (RGI), defined as sales to third parties less costs attributable to those sales.

The RPA-I's appeal

The RPA-I offers important improvements over the current system, and, in some respects, also over the Destination Based Cash Flow Tax (DBCFT) discussed in Chapter 7.[6] It also offers improvements over other RPA proposals.

The RPA-I, and other recently-proposed RPA schemes, allocates taxing rights over residual profit to destination countries – that is, the country of a third-party purchaser of

[3] See Andrus and Oosterhuis (2017) p.102 et seq. and Oosterhuis and Parsons (2017).
[4] Avi-Yonah, Clausing and Durst (2009); see also Avi-Yonah (2010), Avi-Yonah and Benshalom (2011) and Benshalom (2009).
[5] Luckhaupt, Overesch and Schreiber (2012), p.107 et seq put forward a similar model.
[6] See Auerbach, Devereux, Keen and Vella (2017).

goods or services. It therefore partly harnesses the benefits of destination-based taxes discussed in Chapter 5. Below we assess the RPA-I against the five criteria we use to evaluate any system for taxing international business profit. However, by way of introduction, we note two major advantages relative to the existing system: it would be less susceptible to tax avoidance, and it would have a smaller distorting influence on real economic decisions.

These advantages stem primarily from the relative immobility of the third-party purchaser. This is particularly true when the purchaser is an individual consumer, but in many cases is also true when the purchaser is an independent business. By apportioning residual profits to the destination country, the place of taxation becomes both more transparent and less mobile. The greater transparency arises because there is a transaction with an independent third party, as opposed to between affiliates of the same MNE; the value of the transaction is therefore observable, which greatly diminishes, though, as will be seen, does not wholly eliminate, the opportunity to shift residual profit to a tax-favoured jurisdiction. The relative immobility of the destination country should also mean that the location of the activities of the MNE should be less sensitive to differences in taxation between countries. For example, given the option of producing in one jurisdiction and selling in another, and ignoring the costs of transporting goods and services produced, a tax in the place of sale should not affect the location of production.

As discussed below, the RPA-I should be less distortive and susceptible to tax avoidance than other RPA schemes, including that proposed by Avi-Yonah et al, although this does come at the price of greater complexity. The DBCFT does – in principle, at least – have more attractive efficiency properties and goes further in eliminating profit-shifting opportunities and the scope for tax competition. But RPAs also have an important advantage over the DBCFT and other pure destination-based options such as a sales-based formulary apportionment that vest taxing rights exclusively to the destination country. That is because RPAs allocate some taxing rights to all countries involved in the generation of an MNE's profits. This reduces the advantage from locating the tax in the destination country but gives RPAs a practical appeal since they accord more readily with a common perception of fairness and depart less dramatically from current arrangements in the allocation of taxing rights.

As a result, the basic structure of RPA schemes is more familiar to tax practitioners than that of pure destination-based options. In fact, the distinction between routine and residual profit, which is at the heart of RPAs, is the basis for most profit splits under

existing transfer pricing rules. RPAs can thus be viewed as a significant expansion and modification of an existing transfer pricing mechanism.

The RPA-I in particular would require a less dramatic departure from the existing system than other RPA schemes, since it uses familiar transfer pricing methods to calculate *routine* profits. Moreover, as explained below, the implied apportionment of *residual* profits can also be achieved by using transfer pricing methods and concepts familiar to practitioners. The RPA-I scheme thus achieves fundamental reform, addressing many of the problems left outstanding by the BEPS project, but does so in a way that is readily comprehensible to today's tax practitioners.

More on the RPA-I

The RPA-I has the appeal of a hybrid: it uses familiar transfer pricing methods to achieve what they are generally thought to (or could) do relatively simply and effectively (calculate *routine* profits), and it reaps the benefits of a unitary approach where they do not (in allocating the *residual* profit). Even in the latter case, however, it partly uses well-known transfer pricing methods and concepts. This requires some further explanation.

Under the RPA-I *routine* profit is determined using well-established transfer pricing methods. The right to tax this routine profit is given to the country in which the MNE's functions and activities take place. The concept of routine profits is familiar to transfer pricing specialists.[7] It is the profit a third party would expect to earn for performing a particular set of functional activities on an outsourcing basis, in which the third party is essentially a service provider that does not share in the overall risk of the business. Typically, routine profit for functions and activities in a particular jurisdiction can be calculated as a mark-up over (certain) expenses incurred,[8] where the mark-up is based on the rate of profit earned in a comparable service provider, although other transfer pricing techniques could also be used. But the key to the use of these methods in this context is that they aim to identify only the *routine* element of profit, and not to include any *residual* profit.

[7] See OECD (2017) Annex II to Chapter II, p.433.

[8] In principle a mark-up should not be given for expenses incurred in purchasing intermediate goods, as this would result in double counting. This is discussed in more detail below.

The right to tax the remaining *residual* profit is given to the countries in which sales to independent third parties are made: the destination countries. The calculation of how residual profit is allocated between destination countries can be undertaken in two ways, which generate exactly the same results.

The first approach (which we label "bottom-up") draws more closely on existing techniques and is in two steps.

> At the first step, the RGI in each destination country is calculated. As noted, this is equal to the sales revenues in that country less "allocable" expenses (by which is meant expenses incurred in any country that can be directly allocated to the goods or services sold in the relevant destination country) and the routine profit associated with those expenses. Allocable third-party expenses incurred in the destination country, together with an associated routine profit where relevant, are simply deducted from sales revenues. Allocable expenses incurred by other affiliates are allocated to destination countries by constructing deemed transfer prices equal to the expenses and associated routine profits of the other affiliates.
>
> At the second step, residual profit in each destination country is determined as RGI less a share of the MNE's total "non-allocable" expenses (by which is meant those expenses that cannot be directly allocated to any specific sales, for example, research and development expenses, general and administrative expenses and global sales and marketing expenses) and the routine profit associated with those expenses. Each destination country is allocated a share of the non-allocable expenses based on its share of the MNE's total RGI.

The second, and equivalent, approach to allocation of residual profit amongst destination countries (which we label "top-down") is to first calculate the MNE's total residual profit, as its total profit less its total routine profit. This total residual profit can then be allocated amongst destination countries in proportion to their RGI. This yields identical results to the first approach.[9]

The "bottom-up" approach to the RPA-I is likely to appeal most naturally to practitioners steeped in the use of transfer prices to allocate profits. The "top-down" approach may appeal more to economists and others familiar with the concept of formulary

[9] This is shown in the Appendix.

apportionment. But it is important to emphasise that the two approaches can be structured to yield the same outcome.

Countries then tax, potentially at different rates, the routine profit and the residual profit located in that country.

We should note, at the outset, the changed role of Permanent Establishment (PE) rules - one of the cornerstones of the existing system - under the RPA-I. Existing PE rules retain a role for the purposes of determining *routine* profit. A MNE's functions and activities in a particular country are allocated a routine profit only if existing PE thresholds are met. The RPA-I aims to be neutral in its treatment of subsidiaries and PEs. For this reason, once the PE threshold is met, the profit allocated to the PE ought to be the same as the profit that would be allocated to a local subsidiary. This suggests using transfer-pricing rules as set out above also in the context of PEs.[10] PE profit attribution rules[11] could also be used for these purposes, but the goal, again, would be that of attributing only a routine profit to the functions and activities undertaken by the PE.

The RPA-I abandons existing PE rules for *residual* profit purposes. Destination countries are allocated a residual profit once revenues from third party sales meet a set threshold level of sales. Under the RPA-I, therefore, it is immaterial whether a MNE sells its goods or services to consumers in a particular country through a subsidiary, a branch, or remotely without having any physical presence there. Residual profits are calculated in the same way in each of these settings, meaning that the RPA-I does not distort behaviour along this margin.

An example may help to illustrate important similarities and differences of the RPA-I with the existing system. Under traditional transfer pricing rules many MNEs are able to centralise their risks, and to some extent their global or regional functions and activities, in an entity, often described as the entrepreneur affiliate, resident in a tax-favoured country.[12] Imagine then a manufacturer and seller of products that finances

[10] Using transfer pricing rules (Article 9 of the OECD Model Tax Convention) to attribute profit to a PE constitutes a departure from the existing system, as profit attribution rules (Article 7 of the OCED Model Tax Convention) are currently used for these purposes. However, the latter have moved closer to the former under the Authorised OECD Approach (AOA) introduced in 2010. Admittedly, the take up of such rules has been somewhat limited.

[11] When a company resident in one country operates in a second country through a PE, rules are required to determine how much profit is attributable to the PE and therefore taxable by the second country.

[12] OECD (2017b) Chapter IX: Transfer Pricing Aspects of Business Restructurings.

its R&D internally from an entrepreneur affiliate in a tax-favoured country. It also either manufactures its products in a low cost or tax-favoured country or engages third party contract manufacturers that provide manufacturing services. Finally it sells its products to limited-risk distribution affiliates around the world, who then sell to local affiliates, who sell to third parties. Its R&D activities are funded under a cost-sharing basis, or on a cost-plus basis, under a research contract so that the R&D-performing affiliate is deemed to earn no more than a cost-plus "routine" return. Any third-party contract manufacturers that provide manufacturing services also receive a cost-plus, routine return on investment; alternatively, an internal transfer price would be arranged so that the manufacturing affiliate would also earn a cost-plus routine return. Finally, the limited risk distributor affiliates again earns a cost-plus routine return. In this case, the entrepreneur affiliate earns the entire *residual* profit (and suffers any loss) reflecting its role as the deemed "risk taker" (in addition to whatever functions and activities it performs) within the MNE.

The BEPS Action Plan fully recognised the tax planning opportunities presented by current tax arrangements, and tried to address them by a new approach to risk allocation within corporate groups. This looks into the financial capacity of an affiliate to assume risk as well as the personal capacity of its directors and employees to control and monitor risk.[13] This approach is unconvincing, partly because it still allows profit shifting, albeit at the higher cost involved in moving some real activity, but also because, following the OECD's own guiding principle for the existing system (i.e. aligning profit with value creation), the mere increase in personnel controlling and monitoring risk in a jurisdiction is not logically linked to the generation of a profit in that jurisdiction.[14]

The RPA-I system mimics the outcome just described, in which most affiliates of the MNE are deemed to earn only a routine return for tax purposes—except, crucially, that the residual profit would no longer be allocated to an entrepreneurial affiliate in a tax-favoured jurisdiction. Instead, it would be allocated to destination countries. This is the key shift that drives the strengths and appeal of the RPA-I.

[13] OECD (2017b) Chapter I.D.1.2.1 para 1.56 et seq.; for business restructurings see Chapter IX.D.2 para 9.43 et seq.; for an analysis of this new approach see Bilaney (2016); Verlinden, Ledure and Dessy (2016).
[14] Andrus and Oosterhuis (2017) p.89 et seq.; Schön (2014) p.280 et seq.

Chapter structure

This chapter is structured as follows. Section II provides context to the RPA-I proposal by briefly describing the current movement of the OECD Transfer Pricing Guidelines towards transactional "profit splits". Section III describes the RPA-I in more detail; it sets out, at some length, each aspect of the calculations it requires and the rationale underlying them. Section IV briefly compares the RPA-I with a limited number of alternative RPA proposals. Section V evaluates the RPA-I proposal against the criteria set out in Chapter 2. Section VI discusses issues of implementation.

II. THE GRADUAL MOVE TOWARDS PROFIT SPLITS

The distinction between routine and residual profits, which is at the heart of RPA approaches, is familiar to practitioners because a similar distinction is made under an existing – OECD approved – transfer pricing method: profit splits. Moving from the existing system to an RPA would be a very significant change for the reasons discussed below. However, this similarity makes the move evolutionary rather than a complete rupture. Indeed, in some respects, it would be a further step in the direction of travel the international tax system has been on for some time.

Profit Splits under OECD Guidelines

Since the publication of the OECD Transfer Pricing Guidelines in 1995, there has been a constant drift towards profit splits and other formulary methods in the allocation of the profit associated with particular transactions (or related sets of transactions) among affiliates of a MNE.[15] This development reflects practical difficulties that are rooted in underlying conceptual difficulties with the arm's length principle, as discussed in Chapter 3 above.

At a practical level it has been acknowledged that traditional transfer pricing methods – looking for comparable uncontrolled prices or applying a cost-plus test as well as a resale-minus test – increasingly fail to deliver satisfying results.[16] This outcome is inevitable given the increasing tendency of businesses towards tailor-made production chains, close economic integration and the decisive relevance of proprietary intangibles.

These practical difficulties are predicted by theory, given that it is the combination of different production factors (involving input from all parts of the integrated business) that justifies the very existence of firms; and that in the case of MNEs, these factors can be spread across the world. More precisely, the hierarchical organisation of a

[15] See Vann (2003), S.152 et seq. and Wittendorff (2016). For recent materials see OECD (2014a); OECD (2014b); and OECD (2017a). For a historical analysis of the secular movement towards profit splits see Li (2002) p.857 et seq.

[16] Avi-Yonah (1995); Rosenbloom (2005); Couzin (2013),

(continued)

worldwide value chain generates profits that go beyond the sum of the profits that would be derived by the individual group entities in an open-market situation.[17] These synergies (and the economic rents generated by them) are not only hard to capture in practice – they are not even allocable to specific corporate units or geographical locations in theory.[18]

Moreover, this fundamental practical and theoretical indeterminacy at the heart of traditional transfer pricing brings about options for profit shifting between members of the corporate group. Given the mobility of proprietary intangibles and the difficulty faced in valuing them, intra-group transactions involving intangibles have been at the very centre of the profit shifting activities targeted in the BEPS project.

Against this background, in 2018 the OECD put forward the "Revised Guidance on the Application of the Transactional Profit Split Method"[19] (OECD Revised Guidance) which is the latest in a series of moves towards formulary methods. This emphasises the necessity of introducing further formulary elements into transfer pricing – although without changing the international consensus on the value of the arm's length standard as a guiding principle, and applied not to the unitary profits of a MNE but to specific transactions (or related sets of transactions).

This results in a two-step approach. In a first step, traditional transfer pricing methods are applied as far as possible. This means that for "routine functions" within a MNE, the pricing of intra-group dealings will be built on "comparable uncontrolled prices", the "cost-plus" method or the "resale-minus" method.[20] Taking into account the activities of an affiliate – the functions it performs, the assets it uses and the risks it assumes – this would most probably result in a "routine profit" that can be allocated to that

[17] Avi-Yonah and Benshalom (2011) p.378 et seq.; Elkins (2017) p.158 et seq.; Li (2002) p.832 et seq.; Schön (2011) p.231 et seq.; Luckhaupt et al. (2012) p.100 et seq.; Vann (2003) p.139 et seq.; Vann (2010) p.321 et seq..
[18] Keuschnigg and Devereux (2013); Kane (2014).
[19] OECD (2018); this revised guidance replaces Section C, Part III, Chapter II of the OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations.
[20] OECD (2018) para 2.127, 2.152; in a similar vein Avi-Yonah (2010) p.16 et seq.
(continued)

entity. But it is also clear that this "routine profit" cannot logically include the profits derived from the synergies generated by the firm as a whole.

In a second step, those functions within the MNE come to the fore, which – due to their highly integrated nature[21] or due to the influence of unique and valuable intangibles as key sources of profit[22] - are not amenable to traditional transfer pricing examination. The same is true of entities within a MNE which contractually share in the overall business risk of the firm.[23] For these functions (and the group entities performing these functions) the OECD Revised Guidance proposes a limited profit split.

This approach does not involve a pre-ordained allocation rule as under statutory formulary apportionment, but instead looks at the integrated business on a case-by-case basis. The main basis for the allocation of the residual is the relative value of the "contributions performed by the separate affiliates within the firm – either asset-based or cost-based."[24] This reflects the underlying assumption that all locations where the firm is present contribute to the residual profit and thus justify taxation.[25] The slicing of the cake will involve a close examination of the nature of the relevant business functions, the level of expenditure incurred by the participating entities and – to a more limited extent post-BEPS – the contractual arrangements between the involved affiliates. This exercise is meant to fully allocate the firm's profit to the involved entities insofar as it exceeds the "routine profits" assigned to the entities in the first step.

The OECD approach appears to create a fundamental de facto distinction within the corporate group between limited risk affiliates (which are assigned a routine profit) and entrepreneurial affiliates (which participate in the residual profit of the overall enterprise). For the entrepreneurial affiliates this method will result in most cases in a higher return on investment (given the existence of synergy rents within the firm) but

[21] OECD (2018) para 2.120., 2133 et seq.
[22] OECD (2018) para 2.119, 2.130.
[23] OECD (2018) para 2.121, 2.139 – 2.142.
[24] OECD (2018) para 2.114, 2.150 et seq., 2.169 et seq., 2.179 et seq.; for a similar proposal see Schön (2011) p.246 et seq.
[25] For a theoretical argument for this kind of profit split see Vann (2010) p.321 et seq.
(continued)

also in a higher volatility of net results (given the necessity to allocate residual losses in the same fashion as residual profits).[26]

According to the OECD, the division between limited risk and entrepreneurial entities will be derived by testing whether an affiliate's functions as well as its contractual relations with other group members are amenable to traditional transfer pricing analysis, e.g. whether information on comparable uncontrolled transactions is available.[27] The more integrated a firm is and the more hard-to-value its intangibles are, the less it seems possible to resort to those traditional methods.

OECD Profit Splits and RPA Schemes: Similarity and Differences

The distinction between routine and residual profits is at the heart of both profit splits and RPA schemes. But there are also significant differences between the two, and especially between the OECD approach and more formulary approaches, such as the RPA proposed by Avi-Yonah et al. We briefly identify these as a means of introducing some of the choices made in developing the RPA-I.

First, the basic approach of RPA schemes is to calculate "residual profit" at the level of the MNE as a whole, or within the MNE on a product line basis. By contrast, profit splits aim to allocate profit in more limited circumstances, between a limited number of affiliates within an MNE. The RPA-I is aligned more closely with RPA schemes, in that it takes a systematic approach to allocating residual profit for the whole MNE. However, it does leave open the possibility of allocating residual profit on a "product-by-product" basis, within a MNE.

Second, RPA schemes apply to all MNEs (defined broadly), while profit splits are applied only to MNEs with certain characteristics, such as high-integration and presence of hard-to-value intangibles, and even then they apply differentially among affiliates of such MNEs. In the latter case, the OECD Revised Guidance distinguishes between entities that are assigned routine profits and entities that are assigned the residual profit.[28] The OECD's approach has the weakness that the level of a subsidiary's integration

[26] OECD (2018) para 2.115.
[27] OECD (2018) para 2.143.
[28] For a critical view see Robillard (2015) p.448 et seq.

within the overall value chain of a MNE is not a binary matter; rather, it is an incremental matter subject to a sliding scale. There is no "discontinuity" in the level of integration on which a sharp contrast in tax treatment can be built. In particular as far as synergy rents are concerned, these rents derive from the overall set-up of the MNE and not only from the interaction within a subset of affiliates.

Third, unlike the OECD approach, RPA schemes may not apply the full transfer pricing methodology to identify the routine return. For example, the RPA proposed by Avi-Yonah et al sets a fixed return on expenditure incurred by the entity in question irrespective of the functions performed and the risks assumed.[29] This distinction introduces an important trade-off. A fixed return offers simplicity over the OECD approach. However, among other things, this may drive a wedge between in-sourcing and outsourcing and therefore makes taxation more relevant to the boundaries of the firm. By using the full complement of transfer pricing methodology, the OECD approach – and, in relation to routine profit, the RPA-I approach set out here - seek to approximate the tax treatment of dependent and independent firms, which is the basic rationale for the arm's length principle.

The benefit of doing so becomes clear when comparing an MNE's choice whether to allocate manufacturing functions to a subsidiary or to an independent contractor. In principle, this choice should not be distorted by the application of a transfer pricing approach allocating only "routine profits" to individual entities to the extent that these closely approximate the profits an outside contractor would earn. To the extent that only routine profits are allocated to the manufacturing subsidiary, the tax burden on the remaining part of the MNE would remain largely unchanged irrespective of the outcome. It would not even be necessary to establish an overall concept of which entities belong to the "group" as such (an important point as regards the treatment of joint ventures or subsidiaries with minority shareholders). The "make or buy" decision which lies at the heart of the overall business model of the firm would be subject only to genuine business considerations.[30]

[29] Avi-Yonah et al (2009); Luckhaupt et al (2012) p.110, 114.
[30] The distortions created by formulary allocation of profits within a firm as opposed to the allocation of profits to independent contractors is highlighted by Hines (2010).

Fourth, while the OECD approach allocates taxing rights over residual profits on an asset or activity basis – albeit in a rather unprescriptive manner - the RPA-I and other RPA schemes allocate taxing rights over these profits to destination countries. As discussed in general terms in Chapter 5 above, and more specifically below, allocating the residual profit to destination countries brings benefits in terms of improved economic efficiency, less profit shifting and improved incentive compatibility.

III. THE RPA-I IN OUTLINE

1. An Example and Some Terminology

In order to explain the proposal as clearly as possible, we will make use of an on-going example. We set out this example first in Table 1, and then describe how the tax would be applied.

Table 1. Basic Example: Third Party Expenses and Revenues

	Affiliate in:			TOTAL
	A	**B**	**C**	
Sales				
Quantity sold	96	24	80	200
Price per unit	10	10	15	
Revenues	**960**	**240**	**1200**	**2400**
Expenses				
Allocable expenses incurred by each affiliate				
Purchase of intermediate goods		200		200
Other cost of goods sold		340		340
Sales & Marketing: Local	200	40	180	420
Total allocable expenses	*200*	*580*	*180*	*960*
Non-allocable expenses incurred by each affiliate				
Sales & Marketing: Global	200			200
General and Administrative (G&A)	100			100
Research and Development (R&D)	300			300
Total non-allocable expenses	*600*	*0*	*0*	*600*
Total Costs	**800**	**580**	**180**	**1560**
Global Profit				**840**

We consider an MNE with three affiliates located in different countries, A, B and C. Each affiliate sells a single finished good to local consumers. In total, 96 units are sold in A, 24 units are sold in B and 80 units are sold in C. To allow for variation across countries, we assume that the product specification sold in C is of higher quality than that sold in the other two countries. As a result, it sells for a higher price: 15 in C, and 10 in A and B. The cost of goods sold (manufacturing costs in this example) is also higher for the specification sold in C. The finished goods are produced by the affiliate in B. B purchases one unit of an intermediate good at a price of 1 for each of the 200 units of

the finished good produced, at a total cost of 200. In addition, it has costs of 2per unit for the specification sold in C, and 1.5 per unit for the specification sold in A and B, for an additional total cost of 340. The total manufacturing cost incurred in B is therefore 540.

In addition to the costs of manufacturing, which are incurred in country B, the MNE has other costs: local sales and marketing costs are incurred where goods are sold; and costs of global sales and marketing, general and administrative (G&A) and research and development (R&D) expenses, all of which are incurred in country A. We briefly define these terms in Box 1.

All of these costs are assumed to relate to purchases from third parties – they do not include any purchases from other affiliates. Overall, the group has sales of 2,400 and costs of 1,560, implying a total profit of 840.

We now describe in more detail the calculation for this example of routine and residual profit under the RPA-I, and how each is allocated to each country.

Box 1. Some definitions of costs

Allocable costs: Costs that can be allocated directly to specific sales of goods and services. The costs may be incurred in any country but – for the purpose of identifying residual profit in each country – they are "allocated" to the country in which the sale to an independent purchaser is made. In our example, these costs include the cost of goods sold and local expenses for sales and marketing.

Non-allocable costs: Costs that cannot be allocated directly to specific sales of goods and services. In our example, these include G&A, R&D, and global sales and marketing costs.

Cost of goods sold: Direct costs attributable to the production of the goods or services sold. These costs may include the purchase of raw materials and other intermediate goods, labour costs, and the costs of storage, shipping and depreciation.

General and Administrative (G&A) costs: Operational costs that cannot be directly related to the production of any specific goods or services, including items such as rent, utilities, insurance and managerial salaries.

Sales and marketing costs: Costs related to selling, promoting and delivering a product; these are not included in the costs of goods sold. Such costs can be incurred in and

for a specific market (which we label a local expense, and which are an allocable cost), or they could be general expenses not for a specific market (which we label a global expense, and a non-allocable cost).

2. Routine Profits

What are routine profits?

As set out above, the concept of routine profits is familiar to transfer pricing specialists.[31] It can be defined as the profit a third party would expect to earn for performing a particular set of functions or activities essentially on an outsourcing basis. In this "outsourcing model" the third party does not share in the overall risk of the MNE, and earns no return based on the overall success or failure of the product or business to which its activities relate. It functions essentially as a service provider. By employing this concept of routine profit for an affiliate undertaking a similar activity, the tax system would not generally discriminate between activities that are undertaken within the business as opposed to outsourced to an independent business. [32]

Such third-party outsourcing businesses exist for most functions and activities of multinational groups, in the form of contract manufacturers, researchers, logistic providers and marketers. Their returns reflect the value of any expertise in performing their activities and functions plus their capital investments. The returns also reflect their own risk – including the risk inherent in attracting sufficient customers to maintain a profitable business. But these risks do not include the underlying risks of the businesses that use their services.[33]

[31] OECD (2017) Annex II to Chapter II, p.433.

[32] Note that the notion of a routine return is not inherently linked to that of a 'routine activity' often encountered in discussions of transfer pricing. The RPA-I does not require distinguishing between routine and non-routine activities.

[33] It is possible that the risks of the service provider may, in general, depend on the risks associated with the general market conditions for the final goods and services to which its inputs contribute, though in principle not on the unique risks of the specific MNE to which it sells its intermediate goods or services.

The concepts of routine and residual profit profits are broadly related to – but are not equivalent to - the economic concepts of "normal" returns and "excess" returns or "economic rents" which were introduced in Chapter 2. Box 2, below, discusses the similarities and differences between routine profits and normal returns, and between residual profits and economic rents.

Box 2.

Is residual profit equivalent to economic rent?

Routine profit is the profit that an independent contractor would be expected to earn, given that it does not share the overall risk of the business. Residual profit is profit earned by the business in excess of this routine profit. It is tempting to equate this distinction between the routine profit and residual profit to the economic distinction between the normal return on an investment and economic rent, even though they would be calculated differently. However, while there is some overlap between the two distinctions, they should not be thought of as equivalent.

Routine profit is defined as the return for the functions and activities undertaken by the business in a particular period, taking into account only the risks that would be faced by an independent contractor – which do not include the general risks faced by a MNE employing the independent contractor. Similarly, the normal return for the independent contractor is defined in terms of the required expected rate of return on the amount invested in the business, again taking into account only those risks faced by the independent contractor. In theory, this required expected rate of return should be the same as the required expected rate of return for a large MNE to undertake the same activity. (This would be true in standard asset pricing models, for example the capital asset pricing model (CAPM), in which the required return depends on the correlation of the returns of the investment project with the whole of the market).

However, almost by definition, neither the routine profit nor the normal return on capital include compensation for the whole risk of the MNE. Consider, for example, a pharmaceutical company that requires research into a potential new medicine. It could subcontract that work to an independent contractor, who is paid irrespective of the outcome of the research. Or it could undertake the research itself directly. The routine return for the latter approach could be evaluated by comparison with such an independent contractor. But it is clear that this does not represent the entire risk borne by

the MNE, which will depend also on whether or not the research is successful. The MNE would require a higher expected rate of return to compensate it for the higher risk; this higher expected rate of return would not be included in the routine profit and so would instead be included in the residual profit. However, it does not represent economic rent, which is defined as a return over and above that required to compensate for all risk.

In principle, the routine profit should reflect only the required return of the independent contractor – a level of profit required to keep the contractor in business. However, in practice there may be many reasons why the outturn rate of return of a contractor differs from this required expected rate of return, i.e., the contractor's normal rate of return. In particular, higher rates of return may incorporate an element of economic rent, to the extent that the contractor has some market power. In this case a MNE using the contractor as a comparable for the purposes of identifying its routine profit may include an element of economic rent. While an adjustment could in principle be made to remove any component of economic rent, this would be difficult in practice.

In sum, therefore, it is possible that the residual profit may be greater than, or smaller than, economic rent of the overall enterprise.

Where are routine profits deemed to arise?

Routine profits are deemed to arise in the country where functions and activities take place. This is also the case if inputs are purchased from or in a different country. In our example, the MNE undertakes R&D activities in Country A. Routine profit in A can be calculated as a mark-up on its relevant costs, –subject to the availability of data from comparable businesses. This would be true even if part of the costs were originally purchased by the MNE through a central purchasing office in Country D.[34] If the MNE has a subsidiary in A, then that subsidiary must buy the relevant inputs from the purchasing centre in D, and the routine profit in A would reflect a mark-up on those costs. If the MNE has a PE in A, then A would be allocated the same routine profit, as a mark-up on the relevant costs incurred by the central purchasing office.

[34] In this case routine profit would arise in Country D for the purchasing function performed there.

Measuring routine profits under the RPA-I

In the RPA-I system, routine profits are measured following existing transfer pricing practice that relies on public third party comparable outsourcing company data. The primary approach we discuss in this chapter is the cost-plus approach, which requires there to be a comparable business with a relevant rate of mark-up on its costs that can be used to apply to the costs of the MNE.

As a starting point, mark-ups should not be given for costs incurred in purchasing intermediate goods, whether from independent suppliers or related parties, as this would result in double counting.[35] As we set out below, in our example the affiliate in C purchases goods manufactured in B at a cost of 256 (240 of manufacturing costs and 16 of routine profit). If the affiliate in C were allocated a routine profit based on a mark-up of, say, 10% on this expenditure, then it would have additional routine profit of 25.6. This would double-count the routine profit associated with the functions and activities undertaken by the affiliate in B. This would lead to routine profit being overstated and consequently residual profit understated, which, in turn, could have efficiency consequences or could be used for tax avoidance purposes.

Excluding intermediate goods, leaves labour costs and the depreciation cost of capital goods as constituting most of the base for mark-ups for routine profit purposes. But the process of calculating a routine profit is not a precise science; it is driven by the financial data available for third party comparable businesses operating on an outsourcing basis. If these data reveal a profit margin relative to a set of expenses that cannot be separated out, the profit margin of this business should be applied – with necessary adjustments – to the same set of expenses of the company being attributed a routine profit. The double counting problem can thus be addressed – to some extent - through carefully matching the cost bases of the business receiving the mark-up and

[35] By intermediate goods we mean goods incorporated in other products typically either by transformation (e.g., chemical processing) or assembly (e.g. installing semiconductors in a circuit board). This is a narrower definition than that often used by public finance economists which includes any good or service purchased by one business from another. As a matter of principle, under the RPA-I mark ups would not be given on the purchase of intermediate goods defined in these broader terms, i.e. *any* purchase of a good or service from *any* taxable entity, as this would avoid the problem of double counting altogether. But we use the narrower definition of intermediate goods in this chapter to remain as close as possible to the existing system.

the comparable business, and selecting an appropriate mark-up. However, this exercise is likely to be somewhat rough and approximate thus possibly allowing some level of double counting.

Other transfer pricing approaches can also be used. However, whatever approach is used, its aim should be that of identifying only routine profits. This is important in ensuring that the RPA-I complies more closely with the criteria for evaluating taxes. For example, using a transfer pricing approach to identify only routine profits limits both the incentive and opportunity to shift profits to a low-tax country. It also diminishes the distortions to real location choices of the MNE. We discuss these issues further below.

There are many problems with the current transfer pricing system. But whilst it is clearly inadequate in dealing with certain transactions, such as payment for the use of intangibles, we believe it is reasonably uncontentious in dealing with functions and activities where the only risk taken into account is the overall level of business activity of an independent subcontractor. We propose using current transfer pricing practices to determine routine profits because they tend to work reasonably well in this context.[36]

In many cases, data exist on relevant aspects of businesses that may be considered comparable. For example, whether the activity is services (e.g. performing R&D[37] or marketing services[38]) or manufacturing,[39] data from independent public companies in such businesses are typically available in the United States that illustrate the cost structure and range of profitability that can be expected from such activities. In the

[36] It is true that finding comparables within specific geographic areas, particularly in developing countries, can be a challenge given limitations on the number of public companies operating principally in those jurisdictions. In such cases data on companies operating in broader markets may be the best that can be found. But even in these cases useful benchmarks of profitability can be determined consistent with the current application of the arms-length standard. In June 2017, the Platform for Collaboration on Tax (2017) issued "A Toolkit for Addressing Difficulties in Accessing Comparables Data for Transfer Pricing Analyses" which is particularly aimed at assisting the tax authorities of developing countries.

[37] Independent research organisations (including, for example, software development contractors, and drug clinical testing organizations) exist around the world and provide useful data on the returns earned by those activities in the marketplace independent of the financial risks of product development.

[38] Independent marketing companies (including for example, major advertising or market strategy companies) and logistics companies provide useful data on the returns attributable to marketing and distribution activities separate from the risks of developing and marketing a particular product.

[39] Independent manufacturers (so-called "contract manufacturers") provide relatively robust data on the returns earned for manufacturing activities where the manufacturer is not funding the development or marketing of the product being manufactured.

(continued)

European Union, even closely-held companies are obliged to disclose their annual accounts and profit statements to the general public.[40]

A large number of these types of companies are public and, thus, their financial statements can be accessed through various commercial databases. These financial statements can be utilised to estimate "routine" returns or profit allocations to multinational functions and activities. As a general matter for service activities an appropriate allocation can result from looking at the ratios of operating profit to total operating costs of the comparable companies.[41] For manufacturing the analysis can be similar except that often adjustments may be appropriate for differentials in capital investment, in which case the rate of return on capital for the comparables can be employed as an adjustment.

While we label these profits "routine" they can in fact be quite significant and are not only related to "routine" functions in the sense of standardised functions performed on a low-cost or a low-technology basis. The key is that the profit to be allocated is based on what a third party would earn where that third party's compensation is not dependent on the success of the specific products sold or services provided by the MNE.

As noted above, unlike the OECD approach, the RPA-I does not draw a line between subsidiaries that receive a routine profit and those that receive a residual profit. Rather, all functions performed within the group by affiliated entities are attributed a "routine profit" based on comparable functions performed by outside contractors. This applies to all functions and activities, whether they involve allocable costs or non-allocable costs.

Whatever the specific mechanism for applying the available comparable data to estimate a routine return, the transfer pricing disputes that arise in these situations under the existing system are as a general matter relatively manageable. A goal of the proposal would be to limit future transfer pricing disputes to these types of matters.

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[40] Art.14 lit.f Directive (EU) 2017/1132 of the European Parliament and of the Council of 14 June 2017 relating to certain aspects of company law (2017) is critical as to this wide-reaching approach to disclosure; Schön (2006).

[41] Or, stated another way, the ratio of operating profits to revenues, since revenues minus operating costs equal operating profit.

(continued)

If over time these transfer pricing disputes proved in fact to be troublesome or costly, the determination of routine profits could be made more formulary, for example, by implementing safe harbours or even mandatory mark-ups on specified costs[42] or rates of return on investment to determine routine returns without reference to specific comparables. This would bring the RPA-I system closer to the RPA proposed by Avi Yonah et al, although differences would remain on other aspects of the system. Such a move could be attractive for developing countries which have in the past promoted equivalent "safe harbour" rules which allocate a fixed return on business functions performed on their territories.[43] Note also that in recent years, the OECD Transfer Pricing Guidelines have started to accept, somewhat reluctantly, the value of those safe harbours which "involve a trade-off between strict compliance with the arm's length principle and administrability".[44]

But – at least as an initial step - there would seem to be no need to move away from traditional arm's length pricing in determining routine profit as this would risk driving an unwarranted wedge between insourcing and outsourcing of business functions. And, in terms of familiarity to practitioners, there is some merit in not doing so.

Returning to our example, Table 2 shows routine profit for the business described in Table 1. Recall that in our example routine profit is set through the cost-plus method. We assume that there are two different rates of mark-up. Manufacturing – reflected in the cost of goods sold – and research and development are assumed to have a 10% mark-up, while other costs are assumed to have a 5% mark-up. These rates are set arbitrarily to illustrate the case in which rates of mark-up differ between different types of costs.

The mark-up on costs for the manufacturing affiliate in B applies only to costs excluding the expenditure on intermediate goods. It applies a mark-up of 10% to the remaining costs of 340, resulting in a routine profit of 34. The affiliate in A has a high routine profit of 55, reflecting the fact that it undertakes all of the non-allocable expenditures, including R&D which also has a mark-up of 10%. The affiliate in C has low routine profit of only 9, since it only undertakes local sales and marketing expenses.

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[42] For example, mandatory mark-ups could be imposed only on labour costs thus avoiding the double counting problem altogether.
[43] Schoueri (2015) p.705 et seq.
[44] OECD (2017) Chapter E, para 4.112.

Table 2. Routine Profit

	Affiliate in:			TOTAL	rate of mark-up (%)
	A	B	C		
Other cost of goods sold (excluding intermediate goods)		34		34	10
Sales & Marketing: Local	10	2	9	21	5
Sales & Marketing: Global	10			10	5
G&A	5			5	5
R&D	30			30	10
Routine profit	**55**	**36**	**9**	**100**	

Note also that no routine profit is allocated to the affiliates in A and C for the costs incurred in purchasing goods from B. For these affiliates the purchase of the finished goods from B represents the purchase of intermediate goods, which the affiliates sell on to third parties. Note also that no routine profit is allocated to the affiliates in B and C for the costs incurred in A for the Global Sales & Marketing, G&A and R&D activities.

3. Residual Profit

Residual profit is profit earned by the business in excess of routine profit. As outlined in the Introduction there are broadly two ways in which the residual profit can be calculated under the RPA-I: a bottom-up and a top-down approach. The two are equivalent. We begin with the bottom-up approach.[45]

3.1 A bottom-up approach

Under a bottom-up approach, there are two basic steps.

a. The first is to calculate the residual gross income (RGI) in each market country. This starts with the revenues from specific goods or services sold to third-party customers, individuals or businesses located in each country, perhaps determined

[45] For those who prefer algebra to examples, Appendix A formalizes the discussion that follows, and provides a proof of the general equivalence between these two approaches.
(continued)

separately on a product-by-product or product line basis.[46] The affiliate in the market country[47] then deducts all allocable costs which have been incurred in the provision of those goods and services. For purchases from third parties, these are based on the actual price paid. For purchases from related parties, these are based on a deemed transfer price, which is equal to the relevant costs and any associated routine profit of of the affiliate selling to the affiliate in the market country. The marketing affiliate also deducts a routine profit associated with its own direct costs, such as its sale and marketing activities. Deducting allocable costs and any related routine profits from revenues in each market country yields the RGI in that country.

b. The affiliate in the market country also deducts a share of the MNE's total non-allocable costs and related routine profit. The share is equal to its share of the worldwide RGI of the MNE.

The hybrid nature of the RPA-I can be seen clearly in these two steps. Existing transfer pricing techniques are used for costs that can be attributed to a particular product (step a), and an apportionment system is used for costs that cannot be attributed (step b).

Subject to a de minimis exception, an MNE's residual profit is allocated to a destination country following this calculation whether it sells goods or services through a local legal entity, local branch, or remotely. With respect to the calculation of residual profit, the RPA-I thus departs from existing PE threshold and attribution rules. We discuss this further below. For ease of illustration, the MNE in our example has affiliates (a subsidiary or a branch) in each country where third party sales are made. But the same calculation would be made if there were none.[48]

Another important point is whether the calculation of residual profit is carried out at the level of the MNE as a whole, or separately for specific products or product lines.

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[46] We envisage that changes in the value of inventories are not used in the identification of residual profit, but that the value is included only when the item is sold, and the location of the customer is revealed.

[47] We discuss implementation issues below for the case in which there is no affiliate in a market country.

[48] If in our example goods were sold remotely to consumers in D, RGI in D would be calculated as: revenues from third party sales in D less the deemed transfer price for the deemed purchase of goods from B. This calculation is made even if no goods were actually sold to an affiliate in D. A share of non-allocable costs would then be deducted to produce the residual profit to be taxed in D.

Many MNEs keep profit and loss statements by product or product lines for non-tax purposes. Thus, for example, a pharmaceutical company is likely to measure the profitability of each of its drugs that materially contribute to overall profitability. A consumer goods company is likely to measure the profitability of each of its substantial branded products or product lines. There may be advantages to undertaking the calculation of the residual profit on a product-line basis; we discuss this further below.

We now discuss each of these steps in more detail, using the on-going example set out above, in which an MNE develops and manufactures products that are sold to third-party customers. Of course, the system would also apply to other situations, most importantly the provision of services to third-party customers. But the sale of tangible goods most easily illustrates how the system could work.

a. Residual Gross Income (RGI)

The starting point in any determination of residual profits with respect to the sale of products is actual third-party revenues arising in a particular market. These are set out in Table 1.

We next need to deduct the allocable costs associated with the sales of goods and services by each affiliate**.** These include costs of goods sold and local sales and marketicosts.

- For transactions with third parties, these costs are based on the prices paid.
- For (actual or deemed) transactions with related parties, these costs are based on deemed transfer prices. These prices are set when calculating the routine profit earned by the affiliates providing the goods or services to the affiliate in the market country. In our example the manufacturing cost is incurred in B. The routine profit mark-up on (part of) this cost constitutes the routine profit to be taxed in B. The mark-up has a second use: it is added to the cost to provide the price at which A and C are deemed to purchase the goods from B. These two types of costs are reflected in our ongoing example.

The cost of goods sold is determined under standard accounting principles. Thus, for example, if a local sales and marketing affiliate earned revenues attributable to three products manufactured in a number of different affiliate-owned factories, it would determine its cost of goods for each product based on the transfer price it paid to each factory affiliate.

The deemed transfer price used in determining the value of purchases from a related party would be based on the costs of the related party, plus the routine profit allocated on the basis of those costs. In our example, the per unit cost of goods sold is higher in country C (3) than it is in countries A and B (2.5). This cost is made up of the purchase of an intermediate good in all three cases at a price of 1 per unit, and additional costs of 2 per unit for goods sold in C, and 1.5 per unit for goods sold in A and B. The routine mark-up on the additional costs v is assumed to be 10%, which determines an effective transfer price per unit of 2.65 for sales in A and B, and a transfer price per unit of 3.2 for sales in C.

Table 3 sets out the value of transfers from B to A and to C for the goods produced in B. For example, the total value of the transfer of 96 units to A consists of the costs of intermediate goods purchased by B (of 96), plus additional allocable costs incurred by B of 144 and the routine profit associated with those other costs of 14.4. The transfer value is therefore 254.4, equal to 96 units at a price of 2.65 per unit. Table 3 shows the similar calculation for sales to the affiliate in C, and also the allocable costs which remain in the affiliate in B.

Table 3. Within-group transactions of goods: cost of goods sold

	Affiliate in:			TOTAL
	A	B	C	
Quantity sold to third parties	96	24	80	200
Quantity sold between affiliates (+)		176		176
Quantity purchased between affiliates (-)	-96		-80	-176
Allocable costs of intermediate goods in B	96	24	80	200
Other allocable costs in B	144	36	60	340
Associated routine profit in B	14.4	3.6	6	34
Total allocable costs incurred	254.4	63.6	256	574
Value of transfer	-254.4	510.4	-256.0	0

For the affiliate in B, the allocable cost of goods sold can be calculated in two ways. First, it can be built up from the underlying allocable costs, as shown in Table 3, which yields a total allocable cost of 63.6. Alternatively, it can be calculated as the total costs

incurred by B in manufacturing, of 540, plus the associated routine profit of 34, less the value of the transfers to A and C of 254.4 and 256 respectively, which again yields 63.6.

The final step in determining RGI in each destination country is to deduct the routine profit allocated to each affiliate in a market country on its (non-manufacturing) direct costs, which in the example consist of local sales and marketing functions. In our example this routine profit is calculated as a 5% mark-up on local sales and marketing costs. 200, 40 and 180 in local sales and marketing costs are incurred in countries A, B and C respectively, yielding routine profit from these activities of 10, 2 and 9 respectively, as shown in Table 2. The sum of the costs plus the routine profits are deducted from third party revenues in calculating RGI: 210, 42 and 189 in countries A, B and C respectively.

Note that the tax paid on routine profit is *not* deducted from sales revenues in calculating RGI in a market country.

We are now in a position to calculate the RGI in each country and affiliate. In our example, each affiliate has third party revenues, local sales and marketing costs and costs of goods sold. Table 4 combines these elements to derive their RGIs.

Table 4. Residual Gross Income

	Affiliate in:			TOTAL
	A	**B**	**C**	
Third party revenues	960	240	1,200	2,400
Less allocable costs:				
Cost of goods sold	254.4	63.6	256	574
Sales & Marketing: Local	210	42	189	441
Residual Gross Income (RGI)	495.6	134.4	755	1,385
Proportion of RGI in each affiliate	*35.8%*	*9.7%*	*54.5%*	*100%*

In our example, total RGI is 1,385. There is a significant contrast to the allocation of routine profit (shown in Table 2). The affiliate in C has RGI of 755 (54.5% of the total), reflecting the greater profitability arising in C due to the higher price that can be charged for goods to third-party customers. The affiliate in A has RGI of 495.6 (35.8% of the total), reflecting the large quantity of units that it sells, albeit at a lower rate of profit per unit. The affiliate in B sells a relatively small quantity, which is reflected in

RGI of only 134.4 (9.7% of the total). The shares of RGI are important in determining the apportionment of non-allocable costs, as we now describe.

b. Non-allocable costs

We must next account for costs (and any associated routine profit) that cannot be attributed to any specific outputs or sales. Since these costs are by definition not attributable to specific outputs, they are shared between affiliates in market countries on the basis of some apportionment formula. These principles can be applied to each of the material categories of non-allocable expenses: general sales and marketing, general and administrative, research and development and interest expense. In effect all such costs of a multinational group would be charged out to the affiliates in the market jurisdictions that sell products to third parties. Under the RPA-I the apportionment factor is *RGI*, but as discussed below other factors could be used, including sales.

General and administrative (G&A) expenses by definition do not relate to specific products or product lines. For non-tax purposes MNEs often do not include them when analysing the contribution of specific products or product lines to overall profitability. OECD transfer pricing guidelines and the rules of most countries permit affiliates incurring such expenses to charge them out to other affiliates only in circumstances where an affiliate directly benefits from the G&A expense. Thus, MNEs may end up deducting a substantial portion of these expenses only in the country where the original expense is incurred. However, given that these expenses benefit broad categories of income generated by MNEs in different jurisdictions, it would seem more appropriate that they be allocated to those jurisdictions.[49] As with other expenses, the routine profit associated with these expenses must also be apportioned to market affiliates and deducted in the determination of residual profit; otherwise that element of profit would be included both under routine and residual profit.

Like G&A expense, research and development (R&D) expenditures cannot typically be identified with particular products or product lines because much of the costs relate to

[49] This allocation could be made to the income of all affiliates including those that earn only routine returns. But that would add unnecessary complexity without changing the result. If G&A expenses and a mark-up on those expenses are allocated, for example, to a manufacturing affiliate or an affiliate providing logistics services, that would increase the prices they are deemed to charge to selling affiliates by the amount of the cost. Charging G&A costs directly to the selling affiliates achieves the same result more simply.

potential new products (including products that ultimately fail) and not just new versions of existing products. Consequently, it may be appropriate that R&D expenditures, together with the related routine profit, should be apportioned among market affiliates according to products and product lines. For MNEs that are conglomerates or otherwise have different lines of businesses in terms of their research intensity (e.g. pharmaceutical companies that sell over the counter consumer products as well as patented prescription drugs), tax authorities and the taxpayer may agree to apportion R&D expense separately for different lines of business. But in other cases, synergies between different businesses may dictate that R&D expenses be apportioned over all the lines of business of a multinational. This may give some scope for businesses to choose a split between lines of business that brings some tax advantage. While this cannot be ruled out, the principle here is that for the expense to be apportioned to a particular line of business, there must be some genuine connection with that line of business.

In determining the R&D expenditures to be charged to an affiliate, it is important that all costs, including for example, employee incentive compensation (e.g. stock options), be taken into account in some manner.[50] It may be appropriate for the routine profit on the R&D activities to be higher than that provided, for example, for marketing or G&A activities, given the value of the activity. But even for "cutting edge" research, independent research organizations can usually be identified that are engaged in those activities on a services basis. Thus, the routine profit should reflect the financial data of the most comparable independent research organizations.

Table 5 illustrates the apportionment of non-allocable expenses in our on-going example. We start with the total non-allocable costs taken from Table 1, all of which (600) are incurred by the affiliate in country A. We then add a routine profit for these activities calculated as a mark up on these costs - (45) taken from Table 2. This total is then apportioned in proportion of RGI in each country, as derived in Table 4. Since the affiliate in C has the highest share of RGI, it is allocated the highest share of non-allocable costs.

[50] This could be an area of some difficulty to the extent that the tax treatment of stock-based compensation differs in different countries. But the presumption should be that the costs of stock-based compensation should be charged out like other employee compensation.

Table 5. Apportionment of non-allocable costs with mark-up, by RGI

	Affiliate in:			TOTAL
	A	B	C	
Total non-allocable costs, including routine profit				645
Proportion of RGI in each affiliate	*35.8%*	*9.7%*	*54.5%*	*100%*
Apportionment to each affiliate	230.8	62.6	351.6	645

As with the case of allocating the cost of goods sold to the affiliate that undertook the expenditure, it might be noted that there are two ways of calculating the apportionment of non-allocable costs for the affiliate undertaking the expenditure. In our example, this is the affiliate in A. One approach, used in Table 5, is simply to assign a share based on the total non-allocable costs and the proportion of RGI in that affiliate. An approach that is closer to a transfer pricing approach would be (i) to deduct the entire costs of the expenditure in A (600), together with the associated routine profit (45), and (ii) to charge the other two affiliates their share of the costs – in this case 62.6 from B and 351.6 from C. This yields the same charge to A, of 230.8.

The residual profit in each market affiliate is now straightforward to calculate. In our example, we begin with RGI as derived in Table 4, and simply deduct the apportionment of non-allocable costs and related routine profit from Table 5. As in the case of allocable costs, the tax paid on the routine profit allocated for functions and activities relating to non-allocable costs is *not* deducted from sales revenues when calculating residual profit in market countries.

Since non-allocable costs are apportioned according to the proportion of total RGI in each market affiliate, it follows that the proportion of residual profit allocated to each affiliate is the same as the proportion of RGI. This is shown in Table 6.

Table 6. Residual Profit

	Affiliate in:			TOTAL
	A	B	C	
RGI	495.6	134.4	755	1,385
Less apportionment of below the line expenses	-230.8	-62.6	-351.6	-645
Residual Profit	264.8	71.8	403.4	740
. Proportion of RGI in each affiliate / Share of residual profit	*35.8%*	*9.7%*	*54.5%*	*100.0%*

3.2. A top-down approach

An alternative approach to identifying the residual profit in each market affiliate is a "top-down" approach. Under this approach, the total residual profit of the MNE is first calculated, and then apportioned between the relevant market affiliates.

Under the RPA-I, the apportionment is again based on the RGI. This means that the first step in the "bottom-up" approach is necessary even in the "top-down" approach. For other RPA schemes this would not necessarily be the case; for example, apportioning by sales would not require the calculation of RGI.

In our example, residual profit is 720. This can be calculated simply by deducting total routine profit of 120 (Table 2) from total profit of 840 (Table 1). Table 7 applies the proportion of RGI in each affiliate to total residual profit. The resulting apportionment is identical to that in Table 6, following the "bottom-up" approach.

Table 7. Residual Profit using the "top-down" approach

	Affiliate in:			TOTAL
	A	B	C	
Total Residual Profit				740
Proportion of RGI in each affiliate	*35.8%*	*9.7%*	*54.5%*	*100%*
Residual Profit	264.8	71.8	403.4	740

4. Further Issues

Although we have set out the basic mechanics of how the RPA-I would operate, a number of further design issues arise. We discuss these issues here. Further implementation issues are discussed in Section VI below.

A starting point is the aggregation of routine and residual profit. This is, of course, straightforward. It is shown for our example in Table 8.

Table 8. Routine and Residual Profit

	Affiliate in:			TOTAL
	A	B	C	
Routine Profit	55	36	9	100
Residual Profit	264.8	71.8	403.4	740
Total Profit	319.8	107.8	412.4	840

A first issue is the relevance of the aggregation of routine and residual profit, which depends on the tax rates that are applied. If a country applies the same tax rates to both elements of profit, then it makes sense for that country simply to aggregate the two into a single tax base. This would also make it easier to set-off residual losses against routine profits. However, it is possible that countries may choose to apply different rates to routine and residual profits. It might be, for instance, that functions generating routine profits are readily relocated in relation to tax considerations, whereas the allocation of residual profits largely on a destination basis provides a less mobile tax base that can support a higher rate. The separation of routine and residual profits in the way described here offers countries the opportunity to use different tax rates.

A second issue concerns the definition of the tax base, and in particular whether a harmonised definition of the tax base is required for use in all countries participating in the RPA-I. This is clearly an important issue in the EU Commission's consideration of its CCCTB proposal, which is based on a formulary apportionment approach. Indeed, its 2016 proposal consists of two steps: coordination of the tax base in the first step, and consolidation in the second. There is not a common definition amongst states in the USA, which also operate a formulary apportionment approach, although many states refer to the federal tax base. The transfer pricing interpretation of the RPA-I suggests that perfect harmonisation is not required. As long as the routine profit is based on a reasonable definition of the tax base in the country in which functions and activities take place, then transfer prices determining the allocation of residual profit to other countries can also be based on those definitions. Where a country seeks to offer an inducement to greater expenditure – for example by offering an incentive to undertake R&D – these should in principle operate outside the system described here. We discuss this issue further in Section VI.

We now turn to discussing three other important issues in more detail: splitting total profit into its routine and residual components in the case of remote sales; defining

which forms of expenditure should be included in the base for a mark-up on costs to determine routine profit; the allocation of interest expense; and the treatment of losses.

4.1. Routine and residual profit in the case of remote sales

Where a MNE has a local affiliate – either a subsidiary or a branch – in the market country, then the residual profit in that market country can be calculated as described above, and assigned to that local affiliate. However, there are many cases in which a business may make a direct sale to a customer in a different country, without there being a local affiliate. This is especially important for digital sales, whether or not the good or service is provided digitally.

Currently, if the MNE does not have a subsidiary or permanent establishment (PE) in the market country, then the profit associated with the sale is attributed to the selling entity; there is no allocation to the market country. The RPA-I by contrast would seek to assign residual profit to the market country, subject to a de-minimis rule. If, under the RPA-I, residual profit on direct exports was not taxed in the market country, this could lead to a significant distortion to the structure and location of MNEs, which would need to choose whether to pay tax on residual profit in the market jurisdiction (by maintaining a local affiliate) or elsewhere (by not maintaining a local affiliate).

It is therefore important to apply the principles of the RPA-I also to remote sales across countries. This is a significant departure from current practice.[51] For example, suppose that a German business sells remotely only to French consumers, without any current taxable presence in France. Currently, the profit on the transaction would be taxed only in Germany. However, the RPA-I would allocate routine profit to Germany and residual profit to France, according to the calculations set out above. The references to deemed transfer prices above therefore go beyond their traditional role of allocating profits amongst subsidiaries of the MNE. In effect the RPA-I requires the use of deemed transfer prices to calculate the residual profit in a market country whether the

[51] As discussed below, this departure from current practice would require change to existing double tax treaties. However, it would not breach customary international law. Customary international law requires that taxing rights are based on a genuine link (nexus) between the taxpayer, the taxable event and the taxing jurisdiction. This genuine link can be personal or territorial. Selling into a market is deemed to provide a genuine link between the foreign business being taxed and the market country for these purposes.

provision of goods or services in that country is made through a local subsidiary, a local branch or remotely.

Of course, it is also necessary to implement this requirement in practice; the remote seller may wish to evade any tax in the market country. To induce the seller to declare and pay tax on the residual profit, the tax authority in the market country could perhaps charge a withholding tax on sales, which would be creditable against any tax collected on the residual profit.

This element of the RPA-I clearly adds some complexity relative to the existing system.[52] We discuss some more practical issues relating to this in Section VII. However, it is worth repeating that references in this Chapter to transfers amongst affiliates of a MNE should be taken also to include deemed transfers in cases where there is no subsidiary or any physical presence whatsoever in market countries.

4.2. Interest expense

We have not yet discussed how to deal with interest expenses, and we have left interest out of our base case example. Since the intention of the RPA-I is to match the existing system as closely as possible, whilst removing its most significant problems, then it seems natural for the RPA-I tax base to permit a deduction for interest payments in determining both routine and residual profits.

In today's world interest expense is one of the principal tools of tax planners. Because MNE affiliates can adopt a wide variety of capital structures consistent with local tax and corporate law, third party debt is disproportionately located in high tax countries and within-company debt is used to erode the tax base of even relatively low-tax jurisdictions. Given this reality, it is not surprising that limiting interest deductions was considered in detail by the OECD in its BEPS project.[53] One option considered by the OECD was to limit the deductions of third party and intercompany interest expense based on

[52] Note that similar issues arise under the DBCFT and recent proposals to tax highly digitalized businesses.
[53] OECD (2015).
(continued)

a ratio derived from the multinational group's aggregate third party interest cost divided by a measure of income or assets.[54]

In a system that imputes routine returns to most functions and activities and residual returns to market countries, it seems reasonable to allocate third party interest expense on a group ratio basis much as specified by the OECD in this option. But if the intention is to allocate third party interest expense within the multinational, there seems no reason also to permit a deduction for within-company interest expense.

The OECD did not recommend a direct allocation provision (i.e. a direct charge-out to affiliates of third-party interest costs) because many countries were uncomfortable granting an interest deduction in their jurisdiction for an expense incurred by other affiliates in other jurisdictions. Instead, the OECD proposed a limitation on the amount of third-party and intercompany interest incurred by an affiliate that can be deducted by that affiliate, but supplemented this with a 'group ratio rule' which permits higher net interest deductions, based on the financial ratio of its worldwide group. However, the RPA-I system requires overcoming that discomfort more broadly, with G&A, R&D and global sales and marketing expenses being apportioned among market jurisdictions as described above. As a result, allocating third party interest expense to each affiliate of the MNE addresses the debt-shifting problem in a way that is congruent with the general design of the RPA-I. This solution is also conceptually appealing given that money is fungible, and, therefore, interest paid on third-party debt is best seen as benefiting all affiliates of a multinational group.[55]

That leaves open the basis of the allocation of third-party interest expense. One option would be to base the allocation of interest according to the location of the tangible assets of the business.[56] This could be on the grounds that the third-party debt is essentially used for the purposes of purchasing assets. Compared to basing the allocation on income or sales, this would have the merit of being relatively stable, and less prone to fluctuations due to market conditions. On the other hand, the exclusion of intangible

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[54] OECD BEPS Report on Action 4: Limitations on Interest Deductions. Another option considered by the OECD was a fixed ratio (e.g., 10-30% of earnings before depreciation, interest and taxes, or EBITDA).

[55] Note that relief should be given for net interest payments only; if relief were given for gross interest payments, then it would be possible to reduce taxes by borrowing from, and lending back to, the same party,

[56] This was proposed by Graetz (2008), although that paper also noted the possibility of basing the allocation on income; in a similar vein: Hey (2014); Desai/Dharmapala (2015) p.663 et seq. note that this proposal does not satisfy "capital ownership neutrality" as the tax effect of new investment would depend on the overall asset distribution of competing investors in a multinational setting

assets raises some concerns. Furthermore, there is considerable merit in basing the allocation on the same factor as the allocation for the purposes of residual profit of non-allocable expenses, namely RGI. This would mean that it would not be necessary to identify and value all of the tangible assets of a worldwide business, as well as its RGI. Then again, it could be argued that the countries which earn only a routine profit should also bear some of the interest expense, which would suggest an allocation based on total taxable income – that is routine profit plus residual profit, rather than just RGI. Having gone through the steps set out above, that could be readily calculated within the context of the RPA-I.[57]

4.3. Taxable losses

Of course, not all multinationals generate positive residual profits in all destination countries. Three types of loss need to be considered:

- Total residual profit of the MNE is positive, but it is negative in at least one jurisdiction, and positive in other jurisdictions;
- Total worldwide profit is positive, but less than the sum of routine profits, so that total residual profit is negative; and
- Total worldwide profit is negative.

It is necessary to identify a strategy within the RPA-Ito deal with all three types of loss.

We begin with the first, where the MNE makes a positive total residual profit. To illustrate this case, suppose that there are two destination countries, X and Y, with tax rates of 20% and 40% respectively. Suppose further that RGI in the two countries is -50 in X and +100 in Y, giving a total RGI of +50. Finally, suppose that non-allocable costs are 40, implying that aggregate residual profit is 10.

Following the procedures set out above, the weight for apportioning non-allocable country X is -1 (i.e. -50/+50) and the weight for country Y is +2 (i.e. 100/50). RGI in X is

[57] Since routine profits are determined based on operating income, which is determined without regard to interest expense of either the relevant affiliate or the comparables, allocating some interest expense to affiliates earning routine profits would not require any adjustment to their transfer prices with other affiliates.

therefore *increased* by 40, to reach a residual profit in X of -10. RGI in Y is *reduced* by 80, to reach a residual profit in Y of 20.

Another way of thinking about this is that the effective rate of deduction for non-allocable costs is a weighted average of the tax rates in the destination country. In cases where all destination countries have a positive RGI, then the weighted average tax rate applied for deducting non-allocable costs would lie within the tax rates in each country (e.g. if X and Y both had RGI of 50, the weighted average tax rate would be 30%). However, when RGI is negative in one country, this no longer holds. In the example in the previous paragraph, there is a negative weight of -1 for apportioning non-allocable costs to X, and a weight of +2 for apportioning non-allocable costs to B. Specifically, in this example then, the weighted average effective rate of deduction for non-allocable costs is 60%.

This appears to create potential problems. First, the taxable residual loss in X becomes smaller the higher are non-allocable costs. This is at the expense of revenue in Y, which in effect gives relief for more than 100% of non-allocable costs. Second, the effective rate of deduction of non-allocable costs is very high, and it is possible to construct examples where the effective rate of deduction exceeds 100%. This may induce unnecessary spending on non-allocable costs and could potentially generate profit shifting opportunities.

Two alternative approaches are possible. One would be to apportion non-allocable costs only between destination countries that have a positive RGI. In our example, that would mean that all non-allocable costs would be apportioned to Y. Y would then have residual profit of 60, an X would have a negative residual profit of -50. This would be a taxable loss that could in principle be carried forwards (or backwards) to offset against a positive residual profit in other years. If there is routine profit in X, then the residual loss could also be set against the routine profit.

A second approach would be a top-down approach in which total residual profit were only apportioned to countries with a positive RGI. In this case in our example, X would be treated as having zero residual profit, and the total residual profit of 10 would be apportioned to Y. In our example, this might be seen as a more extreme outcome than simply applying the usual approach with negative weights, since in this case the taxable loss in X has in effect been transferred entirely to Y.

In the discussion so far, we have not considered any adjustment to routine profit in the presence of losses. However, in the second and third cases identified, total profit is less than measured total routine profit. This requires us to consider whether the allocation of routine profit should be adjusted in such circumstances. On considering this, a starting point is to ask what principle should be applied to where losses should be identified for tax purposes. The concept of the routine profit is intended to reflect the profit earned by a third party whose return is independent of the overall success or failure of the product or business to which its activities relate. It functions essentially as a service provider. Its only risks reflect that the buyer of its goods or services is unable to pay for those goods and services. That in turn implies that, for tax purposes, the overall risk is borne where the residual profit is located: in the market country.

When residual profit is high, the market country has a higher tax base. When residual profit is negative, then arguably the destination country should give relief, while the origin country, where expenditure is undertaken, still collects tax on the same routine profit. Based on this argument, that would be the case whether or not the business had made an absolute loss, or merely failed to cover its routine taxable profit. This approach would follow the logic of the arm's length principle that the risk of loss should be allocated to the jurisdictions where the residual profits would be allocable if such profits were to exist. That would aid certainty and ease of administration because a taxpayer would know its income taxable in jurisdictions earning routine returns based, for example, on local cost projections alone, without regard to the level of global profits for the relevant products. But – if losses are not immediately rebated in the market country - such a rule could lead to MNEs being taxed on amounts that exceed global profits, possibly over long periods of time.

In any case, this is perhaps to go too far. If the rate of mark-up used to determine routine profit is actually intended to approximate the risk-free rate, then the argument that the origin country should always be able to tax the routine profit – whatever the level of profit – makes sound economic sense. But to the extent that the routine profit includes some element of aggregate risk, in profitable times the origin country also has a higher tax base to reflect that risk. It should therefore be expected to accept part of the risk that the business does not earn at least the routine profit.

A reasonable conceptual position might therefore be that the total routine profit is limited to the actual total profit earned by the business. Where total profit is positive but less than the level normally calculated for routine profit, then total routine profit should be reduced to be equal to total profit, and the market country should have a

zero tax base. In this case routine profits subject to tax would not exceed total profits of the multinational group for that particular product. Where total profit is negative, the tax base in the origin country should fall to zero, and a loss should be recorded in the market country. In that way the losses allocable to market countries would be limited to each such country's share of overall group losses.

This approach is illustrated in Table 10. In the first column, the firm earns revenue of 1,600; in the second it earns revenue of 1,400. In both cases, it has total expenses of 1,500. Assuming a 10% mark-up on costs, that would imply a routine profit of 150 in both cases. However, given revenues, total profit is 100 in the first column, and -100 in the second column. In both cases, then routine profit as normally calculated exceeds actual total profit. The approach suggested here would be to reduce routine profit in the first column to total profit, of 100. Residual profit in this column is therefore zero. In the more extreme case of the second column, the routine profit is reduced to zero, and the loss is attributed to the market country through the residual profit.

Even if this approach were followed, however, several questions remain. First, although this may give an overall assignment to routine and residual profit, it does not necessarily identify the tax base in each country. Should the routine profit be reduced proportionately in every origin country, or should that reduction reflect the nature and reason for the loss? For example, suppose that the product saw declining sales and prices only in market country X, which was predominantly supplied from country Y. Should the routine profit in Y therefore be disproportionately reduced?

Table 10. A potential allocation of the tax base with low profit and with a loss

	Positive profit	**Negative profit**
Revenues	1,600	1,400
Expenses	1,500	1,500
Aggregate profit / loss	100	-100
Routine profit if positive residual profit at 10% mark-up	150	150
Routine profit	**100**	**0**
Residual profit	**0**	**-100**

Second, the mechanism for reducing the routine profit in any country is not clear. Under the basic RPA-I, origin countries would not need to have information on the profit of the MNE as a whole, but only on costs incurred in that jurisdiction. If the approach set out here were to be followed, then each origin country would also need to collect information about the overall profitability of each business with expenses within that country.

Third, suppose that there is not an immediate rebate for losses, but that losses must be carried forward to set against future profit arising in the same country. Then timing differences might yield asymmetric outcomes: the location of sales in loss years may be significantly different than the location of sales in excess profit years. That problem could potentially be dealt with by providing a priority allocation of residual profits in later years to jurisdictions of earlier year losses, effectively "recapturing" those losses. It is not clear whether such additional complexity would be worthwhile.

Another option would be that origin countries identify and carry forward the shortfall in the routine profit. In the example, this would amount to a carry forward to 50 in column 1 of Table [10], and 150 in column 2. When the total profit of the business is sufficiently high, the origin countries would raise taxes on routine profits until the carried forward shortfall had been exhausted. Residual profit would be defined to be net of such additional routine profit in any year. This would mean that the market countries would wait longer until a tax paying position is resumed. Again, while this is defensible conceptually, it is not clear whether the additional complexity required would be worthwhile.

IV. COMPARING THE RPA-I WITH OTHER APPROACHES

The RPA-I described above has similarities with, but also important differences from, other proposals for a reformed international tax architecture. This section compares the RPA-I with some of these prominent proposals and with some further options within the RPA family of tax schemes.

Options within the RPA family of schemes differ on a number of key design features, including: the calculation of routine profit, the locations to which residual profit is allocated, the formula used in that allocation, and whether the scheme is applied on a product-line or a business-wide basis. Subsection 1 discusses other options for allocating residual profit, both the jurisdiction to which it is allocated, and the formula used for that allocation. Subsection 2 specifically comments on other proposed RPA schemes, in particular, those proposed by Avi-Yonah, Clausing and Durst, and by Luckhaupt, Overesch and Schreiber. It also discusses sales-based formulary apportionment, which is a further step from the RPA-I, but which bears some similarity to it given its formulary features and its use of the destination principle. Finally, it also discusses a proposal by Schreiber and Fell for what is effectively a minimum tax in the destination country, which also has similar properties.

1. Alternative allocations of residual profit

The RPA-I allocates residual profit according to the share of the MNE's aggregate RGI attributed to each market jurisdiction. But one can conceive of many other ways in which residual profit could be allocated. We here discuss allocating the residual profit by sales revenue, costs and other factors, including users of digital products. We also briefly discuss allowing countries to negotiate how to divide the residual.

Note that for residual profit to be allocated in proportion to sales revenues, costs or other factors, the allocation must be done through a top-down approach. This is because, as we discuss below, the top-down and bottom-up approaches are not equivalent if the allocation is not based on RGI.

Table 11 reports the outcome of allocating the residual profit in our basic example according to RGI, sales and costs using the top-down approach. Routine profit is not affected by this comparison.

Table 11: Allocation of residual profit by different factors

	Affiliate in:			TOTAL
	A	B	C	
Proportion of RGI in each affiliate	*35.8%*	*9.7%*	*54.5%*	*100%*
Apportionment using RGI	264.8	71.8	403.4	740
Proportion of sales in each affiliate	*40.0%*	*10.0%*	*50.0%*	*100%*
Apportionment using sales	296	74	370	740
Proportion of costs in each affiliate	*51.3%*	*37.2%*	*11.5%*	*100%*
Apportionment using costs	379.5	275.1	85.4	740

Allocation of Residual Profit by Sales Revenue

One obvious alternative is to allocate by sales revenue, taking full advantage of the relative immobility of the location of final sales. This gives the same allocation of residual profit as by RGI if the ratio of the final selling price to the allocable cost per unit (including the routine profit) were the same in all countries. But in general – and in our example – this is not the case. In our example, both the allocable cost per unit and the selling price per unit are higher in C than in A and B. But the proportionate difference in the price is greater than the proportionate difference in costs. C is therefore more profitable per unit, implying that it has a higher proportion of RGI than of sales. Countries like C, with higher profitability – measured as the ratio of sales to non-allocable costs - thus benefit from an allocation by RGI compared to allocation by sales revenue.[58]

Allocation by RGI and sales revenue both bring the benefits that accrue from a partial move to a destination basis of taxation, discussed in Chapter 4 above. But allocation by RGI offers a number of advantages over allocation by sales. First, allocation by RGI has some intuitive appeal over allocation by sales because it rewards countries with higher profitability. For example, if a country has relatively high prices for drugs compared to other countries and hence higher RGI, it could be argued that country's tax revenues should reflect the higher prices. Similarly, if a country does not protect patent or trademark rights so that local profit margins are relatively low, it could be argued

[58] This is so whatever the cause of the higher profitability. Sales in country Y can be more profitable than sales in country Z because: (i) higher prices can be charged in Y than in Z on the sale of goods having the same cost, (ii) because goods can be sold at the same price in Y and Z even if the goods sold in Y have a lower cost, or (iii) as in our basic example, goods sold in Y have a higher price and higher cost than those sold in Z, but the difference between price and cost in Y is greater than that in Z.

that that country should not benefit from the higher margins in other countries with stricter protections.

Second, the bottom up approach can be used to allocate residual profit in proportion to RGI but not sales. Compare the results of an allocation of residual profit by sales using a top down approach (Table 11, above) with the results of a bottom up approach (Table 12, below).

Table 12: Bottom-up approach: allocation of residual profit by sales

	Affiliate in:			TOTAL
	A	B	C	
RGI	495.6	134.4	755	1,385
Proportion of sales in each affiliate	*40%*	*10%*	*50%*	*100%*
Apportionment of non-allocable costs by sales	258	64.5	322.5	645
Residual Profit	237.6	69.9	432.5	740
	32.1%	*9.4%*	*58.4%*	*100%*

Clearly the top-down and bottom-up approaches do not give the same result when using sales revenue as the apportionment factor. This is because under the bottom-up approach only non-allocable expenses are allocated by sales, while under the top-down approach *all* expenses are allocated by sales. The bottom up approach thus cannot be used to allocate residual profit in proportion to sales.[59]

A bottom up approach – and hence allocating residual profit by RGI rather than sales – has practical appeal because its operation is closer to the existing system than the top down approach. Practitioners, revenue authorities and others steeped in the existing system will thus find the bottom up approach more familiar, intuitive, and perhaps even palatable, than the top-down approach.

Third, allocation by sales revenue can lead to instances of economic inefficiency that do not arise under allocation by RGI. This can be seen in the following example. To begin with we set out the case with RGI as the apportionment factor.

[59] Non-allocable costs could be allocated by sales rather than RGI under the bottom up approach as done in Table 12, but this would result in an allocation of residual profit that is neither in proportion to sales nor RGI. It is not clear what benefits this would bring over the allocation of non-allocable costs by RGI.

Suppose that a business is operating in country A and faces the RPA-I in A at rates of 20% on both its routine and residual profit. It produces 100 units of a good at a cost of 10 per unit and is able to sell the goods for 18 per unit. The routine profit on its production activities is calculated as a 10% mark-up on costs. It therefore makes a pre-tax total profit of 800, of which routine profit is 100, and residual profit is 700. In total it pays tax of 160.

It now considers producing and selling in country B. Specifically, it could produce 200 units in B, also at a cost of 10 per unit. However, it can only sell these additional units in B at a price of 11 per unit . This is a nevertheless a profitable investment; the firm requires an after-tax profit of 7% to go ahead (equivalent to the rate of routine mark-up less tax). The project yields a pre-tax profit of 200. Suppose that B also operates the RPA-I, at a rate of 30%. Routine profit in B is 200, on which tax is due of 60. Residual profit is zero. After tax, the firm would make a profit of 140, a rate of return of 7%. The project would therefore go ahead under the RPA-I in both countries.

Now suppose that residual profit is allocated on the basis of sales. Total residual profit is 700. Total sales are 4,000: 1,800 in A and 2,200 in B. Hence the allocation of residual profit is 315 to A and 385 to B. This leads to a tax liability on residual profit of 63 in A, and a tax liability of 115.5 in B, in addition to the tax on routine profit of 20 in A and 60 in B. The total tax liability is therefore now 258.5 – an increase of 98.5 due to the project in B being undertaken. This means that the post-tax profit from the investment in B is only 101.5, a rate of return of only 5.1% - and less than the required rate of return of the business. In this case, the project would not go ahead.

This example illustrates a broader and important point. Allocating residual profit by sales can clearly shift taxable profits earned from sales in one country (in the example, country A) into another (in this case country B). In the example, part of the residual profit (385) initially earned in A is effectively transferred to B for tax purposes. Because the tax rate in B is higher, this made the new project in B uneconomic. On the other hand, a lower tax rate in B could have turned an uneconomic project into one worth undertaking, as we show in the example below. The general point is that allocation by sales can affect real economic decisions, including basic investment decisions of the kind in this example.

Fourth, allocation by sales appears to give rise to tax planning opportunities that are not available under allocation by RGI. Admittedly, one can also think of tax planning opportunities that benefit from allocation by RGI over allocation by sales, but such planning appears to be easier to address. We start by considering two tax planning strategies that are available under allocation by sales but not allocation by RGI.

Allocation by sales revenues, unlike allocation by RGI, can be manipulated by increasing sales revenues in low tax countries with low margins and hence little economic impact. This could be done by purchasing a high-turnover, low-profit margin business in a low tax country. The application of the RPA-I on a product line basis should provide some protection against that, if the acquired business has a different product line. But this protection is not complete to the extent that businesses may be acquired with similar product lines.

Other techniques may be used. Let us return to the previous example, but now let us suppose that the tax rate in B is zero. Under an allocation by sales, there would be an aggregate tax saving of 77 relative to the case of not undertaking the investment in B, as the 385 of residual profit transferred to B now escapes tax. Clearly in this case there would be an incentive to undertake the investment in B even if it were loss making. [60,61]

Both examples lie in the grey area between tax planning and real economic responses.[62] They may be purely tax driven, but they require the taxpayer to undertake real economic activities at a real cost to achieve a more substantial tax advantage.

Tax planning strategies can also be found which benefit from allocation by RGI rather than by sales. Consider an example where a manufacturing business creates goods at a cost of 100 in country A, and sells these goods to consumers, also in country A, for 150. The tax rate in country A is 30%. Assuming routine profit to be a 10% return on

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[60] Tax on residual profit in B would be 77, on residual profit in A would be 195.3, and tax on routine profit in A would be 186.

[61] This example could clearly be made more extreme by allowing the firm to make a loss on its sales in B, and it would be possible to construct an example in which the loss is more than offset by lower tax in A. We chose an example where residual gross income in B is zero in order to avoid any complications arising from losses.

[62] Examples under the existing system include inversions out of the US and moving people functions for profit attribution and transfer pricing purposes.

(continued)

expenses, routine and residual profit in country A are 10 and 30 respectively and its total tax liability is 12.

As a second step consider the case where the manufacturing business sells its goods for 149 to an independent distributor in a tax haven, H.[63] The distributor then sells the goods to the same consumer in A for 150. Assume that the tax rate in H is zero and that H Co has no expenses there. Whether residual profit is allocated by RGI or sales, this planning strategy would result in a lowering of the manufacturer's tax liability. It now has routine profit of 10 in A taxed at 30% (3) and residual profit of 39 which is untaxed. The distributor has no routine profit in H but has a residual profit of 1 in A taxed at 30% (0.3).

As a final step consider the case where the distributor sells the goods back to the manufacturer for 150, which in turn sells them to the same consumers for 150. In this case allocating residual profit by RGI or by sales does make a difference. If residual profit is allocated by RGI, A's residual profit of 39 is untaxed in H;[64] but if it is allocated by sales it is split equally between H and in A.[65] In this case, therefore, allocating residual profit by RGI rather than by sales produces a better tax outcome for the manufacturer.

Countering tax planning of all types is challenging. But it appears to be more challenging the more real economic activity and cost the taxpayer has to undertake to achieve the desired tax result. And it appears to be less challenging if it involves circular transactions with no real, or very minimal, economic costs, as in the last example described above.

Allocation of Residual Profit by Costs

Allocating by either RGI or sales might be felt, however, to allocate too little taxing right to 'origin' countries. If so, one alternative would be to allocate the residual, or a portion of the residual, –along the lines of the OECD's for the "transactional profit split" - on the basis of the functions and activities taking place in different countries.[66] One

[63] The difficulties that can arise as a result of the use of third-party distributors are discussed further in Section V.1.b. below.
[64] A Co's RGI is 39 (149-110) in H and 0 in A (150-150).
[65] A Co's has sales of 149 in H and 150 in A. The proportion of total sales in each country is thus 50%.
[66] For the allocation of the residual profit on the basis of a contribution analysis see: OECD (2018) para 2.150 et seq.; Schön (2010) p.235 et seq.; Couzin (2013) p.175 et seq.

somewhat crude way of doing this would be to allocate residual profit (or a portion of the residual),instead to where third party costs are incurred (although an alternative would be to base the allocation on routine profit). The final panel of Table 11 illustrated the outcome under an allocation based on costs. Clearly this change in allocation factors creates a very significant switch in the allocation of profit from country C (which has 54.5% of the total RGI and 50% of revenues, but only 11.5% of the costs incurred) to country B (which has only 9.7% of RGI and 10% of sales, but 37.2% of costs) and A (which has 35.8% of RGI and 40% of sales, but 51.3% of costs). As a result, the allocation of residual profit in B rises from 71.8 (by RGI) or 74 (by sales) to 275.1, that in A rises from 264.8 (by RGI) or 296 (by sales) to 379.5, while the allocation of residual profit to C falls from 403.4 (by RGI) or 370 (by sales) to 85,4.

While such an allocation may have some appeal in allocating tax base on something approaching an 'origin' basis, the more the system is based on where functions and activities take place, the more it would leave the system open to the existing problems of economic inefficiencies and tax competition. This is because the improvement brought by the RPA-I on these two fronts, relative to the existing system, stems from the allocation of the residual to the market country.

Allocation of Residual Profit by Other Factors

There are of course many other ways in which residual profit could be allocated, including by combining several factors. Building on the notion developed by the UK Treasury, for example, one might consider allocating some part of residual profit to countries where users of services offered by certain highly digitalised businesses are located – HM Treasury (2018).[67] Within the broad framework of an RPA, this could be justified on the grounds that users, like consumers, are relatively immobile. Note that this is a quite different rationale to that given by the UK Treasury, which justified its proposal on the grounds that users create value. Allocating part of the residual in this way would involve a number of conceptual and practical difficulties, not least defining "users" and "digital businesses".

Note that taxing rights can be allocated to countries where users of certain digital services are located under the RPA-I, and therefore residual profit is allocated by RGI (the

[67] For a critical evaluation of this proposal see Devereux and Vella (2018).

same would be true of allocation by sales). This could be done by deeming sales of advertising services to take place in the location of users on whose devices the adverts appear, rather than the location of the buyer or seller of the advertising services. Deeming the sales to take place in the location of the users would thus achieve an allocation of taxing rights to countries where users of certain digital services are located in line with the policy preferences of countries such as the United Kingdom.[68]

Allow countries to negotiate over the allocation of the residual

It is possible that countries would take different positions on these issues. That is, while they may agree in principle to the RPA approach, they might differ in where they would prefer residual profit to be taxed. Countries conceivably could test their "market power" in this regard. If and to the extent that the profit represents location-specific rents or quasi-rents, the origin country may be able to keep its share in the tax base. If and to the extent that the profit is generated by mobile factors, the origin country will probably lose parts of the tax base due to tax competition.

This could lead to some countries preferring to apportion residual profit by where functions and activities take place, as described above, or by some combination of this this location and the market country. Alternatively, countries could perhaps negotiate bilateral arrangements with partner countries, though it is difficult to see how the apportionment could be permitted to vary between tax payers. If there is no agreement between countries, that raises the prospect of the residual profit potentially being taxed twice though of course this may also happen if one or more countries introduce the RPA unilaterally or if countries adopt the RPA universally but with different tax

[68] This is an application of the broader rule that the destination or market jurisdiction for services is the country of the service recipient not the service provider. For example, magazine advertisements should be sourced to the country of readers and advertisements on digital services should be sourced to the country of users of the service.

bases. This issue is also raised by the proposal put forward by Schreiber and Fell (2017) set out below.

2. Other RPA proposals

As noted above, proposals similar to the RPA-I have been made by Avi-Yonah, Clausing and Durst (2009) and Luckhaupt, Overesch and Schreiber (2012). They proposed splitting total profit into a routine component and a residual component. However, their proposals differ from the RPA-I in a number of ways.

Both proposals move further away from the existing system, in that routine profit would be determined by giving a mark-up for all expenses in a relatively arbitrary way, without comparison to the level of routine profit that might be expected for specific activities. Avi-Yonah et al proposed setting the rate of mark-up on expenses to 7.5 %; Luckhaupt et al did not specify a particular rate. Clearly there is a trade-off here: a single rate of mark-up applied to all expenses has the merit of simplicity, but the disadvantage that it is not able to distinguish cases where there might be legitimate differences in the appropriate rate of mark-up.[69] It also gives rise to the double counting issue discussed above.

Moreover, the separate accounting approach used by the RPA-I presented here applies at the product or product line level and can separately identify revenues and costs specifically attributable to those products in specific countries. The same approach is taken in the proposal by Luckhaupt et al. In contrast, the proposal by Avi-Yonah et al simply allocates all residual profit on the basis of sales. They do not trace through the allocable costs for units sold in any particular market. As seen above, this can make an important difference if the ratio of the final selling price to the allocable cost per unit (including the routine profit) is not the same in all countries. Compared to the RPA-I, there is a trade-off: the approach proposed by Avi-Yonah et al is simpler, but does not reflect as well differing economic circumstances. The proposal by Luckhaupt et al is closer to the RPA-I in that it effectively follows a bottom up approach to determine RGI in each market jurisdiction, albeit using an arbitrary mark-up to determine routine profit.

[69] The rate of mark-up would in effect be a policy parameter; for example, it could in principle be set higher in low income countries, to expand their tax base. However, that would raise the question of whether other countries would accept transfer prices based on a rate that was deliberately set higher than comparables. A higher rate of mark-up would also act as a disincentive to locate functions and activities in those countries.

However, this proposal does not address the issue of how non-allocable costs should be allocated between more than one destination country to determine residual profit.

We apply the approach proposed by Avi-Yonah et al to our example in Table 13. The first line identifies routine profit in each location, using a 7.5% mark-up on all expenses incurred in that jurisdiction, including on intermediate goods. In total, routine profit is 117, 7.5% of total costs of 1,560. That leaves a residual profit of 723 to be apportioned by sales (an a top-down approach).

Table 13: Applying the Avi-Yonah, Clausing, Durst approach to our example

	Affiliate in:			TOTAL
	A	B	C	
Routine profit @ 7.5% of costs	60	43.5	13.5	117
Residual profit using sales apportionment	289.2	72.3	361.5	723
Total profit	349.2	115.8	375	840

c. Formulary apportionment

Formulary apportionment has been practiced in the United States and Canada for a long time[70] and is currently discussed as a model for the European Union on the basis of the European Commission's proposals for a "Common Consolidated Corporate Tax Base" (CCCTB).[71] A standard form of formulary apportionment which has been employed by most U.S. states in the past[72] and which is also championed by the European Commission[73] would allocate profits to jurisdictions based on the location of three factors: labour, capital and sales.

[70] Hellerstein (2013).
[71] Proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB) {SWD(2016) 341 final} {SWD(2016) 342 final}25.10.2016 COM(2016) 683 final 2016/0336 (CNS).
[72] Hellerstein (2013).
[73] Art.28 of the Draft CCCTB Directive supra
(continued)

In recent years, more and more U.S. states have moved towards a one-factor system which uses only the point-of-sale as the decisive factor for the application of the sharing mechanism.[74] A main reason for doing so was to avoid the disincentives for locating assets and payroll in a state, inherent in the use of those two factors in the apportionment formula. This system has also been discussed for the international arena.[75] Taking a closer look, this model - sales-based formula apportionment - bears some relationship to the RPA-I but there are fundamental differences.

First, and most fundamentally, traditional formulary apportionment allocates *all* of the unitary profits of a multinational group by means of some weighting factors; all RPA schemes on the other hand, allocate only residual profit in this way, with routine profits allocated to the jurisdiction in which functions and activities take place. Under sales-based formulary apportionment a MNE's total profit is allocated by sales, there is no allocation of routine profits to countries where functions and activities take place. This means that formulary apportionment is undeniably a simpler approach, which should reduce compliance and administrative costs. But it also risks what some might see as a disproportionate allocation of revenue away from jurisdictions in which activities take place.

Second, as discussed above, allocation by RGI rather than sales takes into account the cost of goods sold in the market country; so the RGI approach apportions a smaller share of total profit to market affiliates with a relatively high cost of goods sold.

Third, conventional formula apportionment allocates the overall profit of the whole firm. The RPA-I on the other hand, as we have noted, is applied on a profit or product line basis, providing a finer application of the underlying logic and limiting risk of distortions to the choice of product lines within the MNE. Of course, a pure formula apportionment approach could also be undertaken on this basis.

Table 14 illustrates how a pure formulary apportionment system using only the location of sales would apply in our base case example.[76] The total global profit of 840

[74] Mazerov (2001).
[75] For an analysis of different proposals see: Morse (2010); Roin (2008).
[76] Under the RPA-I, the allocation of total profit is amongst origin and destination countries, like the traditional three-factor formula. However, the allocation under the RPA-I is based on a very different calculation; there is no particular reason to expect the RPA-I to generate an outcome similar to the three-factor formulary apportionment method.

would be calculated and simply allocated to each affiliate and country according to where sales are made.

Table 14. Formulary apportionment based on sales

	Affiliate in:			TOTAL
	A	B	C	
Total profit allocated by sales	336	84	420	840
RPA-I allocation of total profit	311.4	125.6	403.0	840

Note that in our example, residual profit is much larger than routine profit. And since the RPA-I approach allocates residual profit to market countries, the difference between this and pure formulary apportionment based on sales is relatively small. Nevertheless, as would be expected, country B fares relatively badly under the formula apportionment approach since it is primarily the country where manufacturing takes place, rather than where sales are made.[77]

d. Minimum tax in destination country

There are also some similarities between the RPA-I and a recent proposal of Schreiber and Fell (2017).[78]

All of the afore-mentioned proposals - those in the RPA family of proposals as well as fully-fledged formulary apportionment - divide the total profit of an international firm among the involved jurisdictions in an exclusive manner. That is, no element of a MNE's profit should arise in more than one jurisdiction, as long as the jurisdictions coordinate to agree the same approach. The Schreiber and Fell proposal instead allocates the overall profit associated with the relevant transactions of a MNE to both the origin and market countries. Specifically, it has three elements. First, all jurisdictions would levy an origin-type tax by application of conventional transfer pricing methods.[79] Second, each market country would tax a certain share of the overall profit of the enterprise

[77] Aggregating through the economy, the difference in outcomes from basing the allocation on origin and destination depends primarily on the balance of trade. Countries which are important origin countries are typically also important destination countries.

[78] Fell (2017); Schreiber/Fell (2017); Schreiber (2018)

[79] While the mechanism for calculating source country tax under Schreiber-Fell remains somewhat unclear, it appears to rely on traditional transfer pricing methods, looking to assets and functions, whereas under RPA source country tax is specifically related to routine returns on purchase from third parties.
(continued)

(calculated either on a transactional basis following product lines as proposed here or calculated on the basis of a group-wide profit split).[80] Third, the market country would give a tax credit for the conventional origin taxes paid elsewhere.[81]

This arrangement effectively makes the tax in the market country a minimum tax. In a simple two country example, if the tax in the country of production is lower, the total tax liability is equal to that in the market country; where tax in the country of production is higher, there is an excess credit and no tax is paid in the market country. In this way, the scheme reduces or eliminates any gain to the MNE from shifting profits from the origin country to low-tax jurisdictions. As a result, it mitigates what under the RPA might be an incentive to set low tax rates of routine profits to attract activities. At the same time, however, it creates an incentive for origin countries to set tax rates sufficiently high to soak up any potential liability in the market country.

A key difference between this proposal and the RPA family of proposals is the incentive of market countries to introduce such a scheme. Under RPA proposals, market countries would be guaranteed revenue conditional on the existence of residual profit. But under the Schreiber Fell scheme, they would raise revenue primarily only to the extent that origin countries were unable to prevent profit shifting. It is not clear why a market country would be prepared to provide a minimum tax back-up for an origin country, except under a degree of international coordination.[82]

[80] The two different approaches are laid out by Schreiber (2018) p.265 et seq.
[81] Specifically, they propose that a credit is given for a share of conventional taxes, calculated as the worldwide tax liability multiplied again by the share of sales in the market country.
[82] This is acknowledged in Schreiber (2018) p.268 et seq.

v. EVALUATING THE RPA-I

We now turn to an evaluation of the RPA-I. We do so under two settings. In the first setting, which we discuss in more detail, we consider the case in which the RPA-I is adopted universally, though with countries retaining the right to set different tax rates. In the second setting we consider the case in which the RPA-I is adopted unilaterally by one state. The latter is important for identifying whether individual countries would find it in their own interest to adopt the RPA-I or whether it requires significant agreement between countries; whether they would want to maintain it if other countries were using it; and whether it would be subject to tax competition.

We evaluate the RPA-I against the five criteria set out in Chapter 2: economic efficiency, robustness to avoidance, ease of administration, fairness and incentive compatibility.

Throughout this analysis, it should be noted, we assume that tax revenue remains with the country in which liability arises. It would be possible, for example, to identify the tax liabilities exactly as is done above, but for the market country to share the resulting revenue with the countries in which functions and other activities were undertaken. The effects of the tax on business – for example, on the location of its real activity and tax planning – should not be affected by any such re-allocation of revenue between countries. It might be argued, for example, that under the RPA-I the allocation of taxing rights between the market countries and origin countries was too much in favour of the market countries, and was therefore contrary to the interests of origin countries. If this view were taken, then it would be possible to re-allocate tax revenues to counteract this effect. Such revenue-sharing arrangement could then in principle ease adoption of the tax. But, in practice, revenue sharing seems unlikely, and so we consider the RPA-I in the absence of any such re-allocation.

1. *UNIVERSAL ADOPTION*

a. Economic efficiency

The tax base

As described above, the RPA-I is a tax on business profit as defined under most existing corporate tax bases. It is not intended to radically reform the tax base – for example,

constraining it to fall purely on economic rent, as under the destination-based cash flow tax (DBCFT) in the next chapter. Instead it taxes the return to equity investment, whilst giving relief for the cost of external debt finance. This choice of tax base is designed to make it as close as possible to existing systems. But it is not a fundamental feature. The key features of the RPA-I concern the international allocation of profit between countries. It would be perfectly possible to use other tax bases – including one based on economic rent, or using a different treatment of interest[83] - whilst applying the same principles for the allocation of taxing rights across countries. That leaves open the extent to which the tax base would need to be harmonised across countries which implemented a common RPA-I system. We discuss that issue in Section VI on Implementation below.

By design, then, the RPA-I fails to remove two forms of inefficiency that have been described in Chapter 3.

First, because the return to equity investment is taxed, then there would be a distortion to decisions as to the level of investment. That is – for a given required post-tax rate of return on an investment – the tax would raise the required pre-tax rate of return. Investment projects which would have met the required threshold rate of return in the absence of tax may not meet that threshold in the presence of tax. Note that as long as the combination of both elements of the tax – on routine and on residual profit – uses a conventional tax base, then together they typically (though not necessarily) have the effect of raising the required return on investment and hence creating a disincentive to investment. The total effect of the tax must therefore take both into consideration.

Second, because the cost of external debt finance – interest payments to third parties – remains deductible, the tax creates an incentive to use debt finance rather than equity finance. This is, of course, common under existing tax systems, and has been the subject of much academic investigation, and different proposals have been made to remove the incentive.[84] We should here distinguish the general bias in the tax system

[83] For example, the RPA could in principle have cash flow as a base, as in the DBCFT proposal in Chapter 7, or an allowance for corporate equity (ACE), as is now part of the European Commission's CCCTB proposal. Combining an ACE with interest deductibility in effect gives relief for the cost of finance and means that the tax base is effectively only economic rent. Alternatively, it could also limit interest deductibility. These options have been studied extensively elsewhere; here we focus on the international aspect of the RPA-I.

[84] For a policy analysis of the different proposals to reduce the debt bias see: de Mooij and Devereux *(continued)*

in favour of debt finance, and the use of debt to shift profits to lower-tax jurisdictions. Restricting relief to the cost of borrowing only from independent parties - and not for within-company debt - is intended to address the profit shifting issue, but leaves open the general bias in favour of debt.

However, to re-emphasise, the RPA-I deliberately mirrors as closely as possible existing tax systems. Not surprisingly, then, some of the distortions that are observed under existing systems would be maintained under the RPA-I. It would be perfectly possible to modify the tax base of the RPA-I to avoid these distortions.

Location decisions

The impact of taxation on the location of economic activity has been the subject of considerable research, which tends to show that the existing system has a very significant impact on location decisions.[85] This is a clear inefficiency, which has the effect of raising overall social costs, as businesses choose locations for tax reasons rather than for commercial reasons. One aim of the RPA-I is to limit the impact of taxation on location choices of multinational companies.

In making a decision as to where to locate various functions – for example, production, R&D, administration, financial, marketing – the most relevant part of the RPA-I system is the tax on routine profit. Such location choices would not be generally affected by the tax on the residual profit, since that arises in the market country. The tax advantages of moving functions and activities are therefore broadly limited to the taxation of routine returns. As a result, the incentive structure for locating real activities in tax-favoured jurisdictions will be changed dramatically, because only the routine profit on those activities will be subject to tax in those jurisdictions. In most circumstances there are significant costs to moving functions to tax-favoured jurisdictions and to maintaining them there as well. Those costs might be justified where substantial residual profits follow to that jurisdiction. But the comparison of costs and benefits is very different when only routine profit follows.

(2009); Fatica, Hemmelgarn and Nicodème (2012); Centre for European Economic Research (2016); Branzoli and Caiumi (2018); as to the legal background of the debt-equity distinction see Schön (2012) and Schön et al. (2014).

[85]For surveys of this literature, see, for example, De Mooij and Ederveen (2008), Feld and Heckemeyer (2011) and Voget (2016).

(continued)

A simple example can illustrate this point. For service activities, a routine return will often be in the range of cost plus 6% to 12% of revenues, implying an operating margin on costs from 5 to 10%.[86] Moving activities with 100 of costs to a tax-favoured jurisdiction to obtain a low tax rate on 12 of income is only attractive if the move does not materially increase the relevant cost base. Suppose a business was considering moving activities with costs of 100 from a country with a high tax rate of 35% to a country with a low tax rate of 12.5%. The tax saving on income of 12 would be 2.7 (i.e. 22.5% of 12). It follows that a 3% increase in costs because of the move would wipe out the tax savings.

As this example illustrates, if only routine returns are allocated to the jurisdiction where functions and activities take place – as opposed to broadly the overall return as in the existing system - then the incentive to shift functions and activities to tax-favoured jurisdictions would be dramatically reduced. It should be acknowledged that identifying a routine return is not an exact science; so that there may be opportunities for the taxpayer to exaggerate the routine return if the relevant tax rate in the country of the routine return is lower than that in the market country. Nevertheless, the additional incentives to shift activity to a particular location are not likely to be affected greatly by such manipulation. Suppose, in the example above, the routine profit was mistakenly identified at 15 instead of 12: this would raise the tax gain only to a little under 3.4. Again, a 3% rise in costs would almost wipe out the tax gain.

As far as R&D activities are concerned, the RPA-I follows a straightforward approach: the entities performing R&D will be assigned a routine profit along the lines of what an outside contractor would earn. Any additional profit derived from the exploitation of the IP right will be taxed in the destination countries. It would make no sense to shift IP rights to tax havens and other low-tax regimes as these jurisdictions will not have taxing rights anymore (unless they can show that functions performed on their territory deserve a routine profit or that the final product is sold there).

Of course, many current regimes have special treatment for R&D activity, including the combination of patent box regimes and the nexus approach introduced by BEPS and described in Chapter 3. Under existing systems, these can give a sizable incentive to locate R&D in a country with a special regime. It seems reasonable to argue that such regimes should lie outside the RPA-I system. That is, any explicit benefit provided by a

[86] 100 of costs marked up by 12%, for example, is equivalent to revenues of 112 less costs of 100 yielding an operating margin of 12 or close to 10% of revenues.

government for R&D (or any other activity that the government wishes to support) should be independent of the working of the RPA-I, and hence have no impact on the tax revenues collected by other countries. The key to achieving this is for transfer prices and values to be independent of such an explicit benefit; ultimately the benefit would then not affect the determination of residual profit (or routine profit) in other jurisdictions. Of course, a lower tax rate on some forms of income, as is typically found in a patent box, would also have no direct impact on the liabilities in other countries. The same should apply to other provisions such as an R&D tax credit. An implication of this is that governments may continue to seek to compete with each other over tax provisions that are not fixed as part of the RPA-I.

Intermediate companies

One other location decision may be affected by the RPA-I - the location of a business buying intermediate goods.[87] A central motivation for considering taxing profit in the market country is that individual consumers are relatively immobile; they are unlikely to move their location to save tax on the profit of the business supplying them with a good or service. But this does not necessarily apply in all cases to businesses.

Suppose an independent business - firm X - buys raw materials, capital goods and other intermediate goods, and also services from a range of other profitable businesses. These purchases can range from oil and commodities to machines, knowhow and IP, and legal services. The businesses selling to firm X will have at least part of their residual profit in the country in which firm X makes the purchase. In extreme cases, if X purchases the entire output of some business, then that business will have all of its residual profit in that jurisdiction. In all of these cases, the aggregate tax bill of the selling businesses would be lower under the RPA-I if X is located in a low-tax jurisdiction. Note that X would also receive a routine profit on its activities in the low tax jurisdiction. If X merely purchases intermediate goods in the low tax jurisdiction, which it then transfers to affiliates in other locations, it will only receive a (limited) routine profit on its centralized purchasing activities.

[87] Andrus and Oosterhuis (2017) p.99.
(continued)

To the extent that the tax levied on the profit of the businesses selling to X is passed on to X through a higher price, then X may benefit from lower input prices if it locates in a low tax jurisdiction.[88] This may result in an economic inefficiency due to a distortion to the location of firm X; if X would have lower costs elsewhere but its location decision is affected by this factor, then there would be an economic inefficiency. Of course, it is hard to measure the scale of this inefficiency. It does not arise under existing treatment, at least at international level, since taxes on profit are not generally levied in the market country. Note also that it does not arise under the DBCFT, as explained in Chapter 7. There is no empirical evidence on the issue of which we are aware. It is likely that the impact will depend on the nature of competition in the industries the output of which X purchases, and the extent to which the selling businesses adjust their sales prices between countries depending on the tax rate on residual profit.[89]

b. Robustness to Avoidance

When adopted in all countries, the RPA-I addresses well the three main channels used by multinational companies to shift profits to low tax jurisdictions: lending from a low-tax country to a high-tax country, locating intangible assets that earn a royalty or license payment in a low tax country, and manipulating transfer prices. Let us examine each of these in turn.

First, the RPA-I would not give relief for the cost of interest payments on within-company debt. So a company that lends from an affiliate in a low tax jurisdiction to an affiliate (or parent) in a high tax jurisdiction would simply not receive relief in the high tax jurisdiction. Further, under the existing system, business is much more likely to borrow from third parties in high tax jurisdictions, since that raises the value of tax relief. Under the RPA-I, however, third party interest costs would be allocated – as discussed in section III.4.3. above - throughout the business, on the basis of income or assets. Shifting, say, income to a high tax country would then increase the value of the

[88] Note that the tax could affect the price, even if the tax base of residual profit is equal to economic rent, because X can choose the location of purchase in order to affect the seller's tax liability.

[89] Mention should be made of the purchase of capital goods that are used in cross border transportation, principally ships and airplanes. The taxation of the income from these goods is problematic today because much of the income is attributable to services performed outside the boundaries of any particular country and the owner of the goods is often resident of a tax-favoured jurisdiction. These problems would remain in identifying the location of routine and any residual profit.

interest deduction; but it is also likely that it would increase the overall tax liability. The capacity to use debt finance to shift profit between jurisdictions, would therefore be eliminated.

Second, under the RPA-I it would no longer be the case that a large element of profit could be deemed to be a return to intangible assets held in a low tax jurisdiction. Countries in which R&D is undertaken would earn a routine rate of return on their activities. They would not share in any residual profit earned by the company; that would be allocated to the market countries. Within-company royalty payments from an affiliate using the IP to an affiliate that undertook the R&D would not affect the tax revenue in either jurisdiction, being ignored for tax purposes.

Third, the key element of the existing transfer pricing regime that would be incorporated into the RPA-I would be the identification of routine profit. It is the value of routine profit that determines the tax base in the country where functions and activities take place, and the deemed transfer price to other affiliates in the group.[90] There is therefore no need to try to identify a comparable price for a purchase from an affiliate where that price is intended to reflect both routine and residual profit. Under the bottom-up procedure described above, the transfer price will instead be based on the costs incurred undertaking the activity plus the routine profit associated with that activity. It is not based on the price sold to a third party. In this respect, the RPA-I diverges from the pure Arm's Length Principle. But it is this divergence that means that the RPA-I is much less susceptible to profit shifting through the manipulation of transfer prices.

In sum, the RPA-I would create significant advantages over the current system in terms of its robustness to avoidance. Many of the issues addressed in G20/OECD BEPS project would no longer be relevant. However, no tax system is perfectly robust to avoidance. We now turn to some areas where problems may remain, or would be introduced.

Third-party distributors

One important issue for the RPA-I is the determination of the location of the sale to a third-party customer. That is the location of the "market" for determining where the

[90] In the case of remote sales by a business to a purchaser in another country the routine profit is similarly used to calculate the business's residual profit in market country – see Section III.3.1.

residual profit would be taxed. Suppose now that a business, B, aimed to sell to consumers resident in country H, a high-tax country. Instead of selling directly to consumers in H, the business might instead sell to an independent third party distributor, D, located in a low-tax country L. The distributor, D, would in turn sell the product on to the final consumers in H. In doing so, D would face the high tax rate of H on its residual profit. But under this arrangement, D is likely to earn only a routine profit, and is therefore unlikely to pay very much tax in H, if any. By contrast, the original business, B, may be highly profitable, but would be able to locate its residual profit in L, the low tax country.

Note that this is similar to the inefficiency problem noted above, in that businesses may choose to locate their purchases in low tax countries if that might reduce the price that they have to pay to suppliers. However, here we may imagine that (at least in respect of goods, among neighbouring countries) the costs of the distributor do not vary between locations, so that there is no economic inefficiency. There remains though the problem of avoidance: if the ultimate customers were resident in L, then the arrangement with the independent distributor would not be necessary. This issue is also related to the more general difference in the treatment of supply chains that are all part of a single multinational compared to those that are not. If D and B were part of the same group, then the residual profit would still be liable to tax in H. It is only because they are not part of the same group that the avoidance opportunity arises.

The most obvious solution for this appears to be for the "market" country of residence of the ultimate consumers, H, to look through the independent distributor, D, to tax a share of the profits of the original producing business, B. This would involve a significant additional extension to the taxing rights of the market country. The market country would be taxing the original producing business, B without it having a physical presence *or* even direct sales in said country. A question arises as to whether there would be a genuine link between country H and B in this case, as required by customary international law for the exercise of a taxing right. But the exercise of this right would also not be straightforward in practice. To induce B to declare and pay tax on the residual profit, the tax authority in H could perhaps charge a withholding tax on sales made by D, which would be creditable against any tax collected on the residual profit of B. D may then be expected to pass the withholding tax on to B by offering a lower price for the goods. B may then have an incentive instead to declare its residual profit in H.

Even if this was successful in practice though, there remains an issue of identifying any contribution made by the distributor D. For example, D may change the nature of the good in some way – anything from changing the packaging, to adding a brand name, to more important modifications. Then the value of these changes would need to be addressed. But the RPA-I approach would give a way of identifying the value attributable to D. That is, the aim of the look-through approach would be to treat D and B as if it were part of the same multinational group. In that case, D would be taxed on its routine profit in the low tax country, L. Any residual profit arising from the activities of D and B together would be liable to tax in H. How much of the residual profit is attributed to each would depend on the original price paid by D to B. There would remain an issue of defining the circumstances in which two businesses were to be deemed as being in the same group. But such an approach might address the most egregious cases of this type of avoidance.

Product v Product Line Composition

Another area in which business may be able to make choices that affect their tax liabilities under the RPA-I is in the aggregating or disaggregating of products and product lines. Whether to determine routine and residual profits separately for each product or together for multiple products could materially alter the amount of tax allocable to any particular jurisdiction. Giving taxpayers discretion over such grouping could therefore be problematic.

For example, suppose that one product is highly profitable and the product is sold in a market in a high tax country. Another product is less profitable and is sold in a low-tax country. Then combining these two products into one product line for tax purposes may affect the allocation of residual profit in the two countries, depending on how non-allocable costs are split between the two products if they are kept separate for tax purposes.[91] There is a trade-off here. If these two products are quite different from each other, then it could be argued that the tax bases in each of the countries ought not to be affected by combining the two products. On the other hand, if both products are sold by the same multinational, then there could be some benefit in reducing complexity and tax planning opportunities by combining the product lines.

[91] As discussed in Section IV.1., this is a more serious issue when sales are used to apportion residual profit.

While some tax planning is probably inevitable, the scope for such tax planning may be limited in practice. The base for determining routine and residual profits should be the underlying management financial statements that an MNE uses for non-tax purposes and which have been audited by independent external experts. The design and maintenance of these accounting systems involve business judgments by MNEs as to the level of detail that is relevant for non-tax purposes. Of course, one would expect tax considerations to have some impact on these management systems under an RPA-I. Tax authorities can garner some protection by holding taxpayers to a requirement of consistency over time in the level of aggregation or disaggregation of products, as well as the basic requirement that expenses can only be set against sales in which there is some connection, although that may depend on the capacity of the tax authority.

Remaining Disputes

Relative to the current system, the RPA-I should also significantly reduce the number and magnitude of controversies over transfer pricing/income allocation issues. No doubt many issues will remain: disputes over how to measure the appropriate routine returns will continue as they do today; new disputes will arise over what transactions are treated as local sale transactions; disputes will also arise over whether a particular product is a component or intermediate product versus a final product, or whether two products should be regarded as in the same product line.

The RPA-I would also introduce new scope for dispute in the case of remote selling, where taxing rights would be allocated to the market country in a way that is not done at present.

But overall it is difficult to see that the number and magnitude of these disputes will come close to the levels under the existing system— in the case of transfer pricing particularly after the emphasis in the new OECD guidelines on allocating income to the jurisdiction where the management of risk occurs.

Moreover, once adopted, if disputes were problematic, there would be the option of making the RPA-I system more mechanical. For example, it would be possible to move further towards the route taken in the proposal by Avi-Yonah, Clausing and Durst, by specifying routine returns on the basis of fixed mark-up on costs and/or return on assets employed rather than having those returns be based on third-party comparables. But as noted above, the aim here is to examine how a system can be designed that is

as close as possible to the existing transfer pricing system, yet avoid its most significant problems, including eliminating the advantages of moving functions and activities to tax-favoured jurisdictions. Any further refinements that are necessary to reduce the level of disputes could be after its implementation.

c. Ease of Administration

We examine detailed issues of implementation in Section VI below. Here we simply outline the main features that differentiate the RPA-I.

The RPA-I should reduce the administrative burden associated with applying and keeping under constant review certain anti-avoidance rules. In particular, the RPA-I should eliminate the most difficult transfer pricing issues, including those relating to the pricing of intangibles.

It is the case that the RPA-I involves allocating profits between jurisdictions for remote sales when this is not currently required. This will certainly add to the administrative burden. However, the burden of collecting tax on routine profits does not appear to be particularly high. As noted above, transfer pricing disputes may arise when setting routine returns; however, these ought to be relatively manageable. Furthermore, if this exercise becomes too burdensome, one could move to more mechanical pricing systems, as noted above. This might be a particularly attractive option for low income countries or countries with limited resources and/or expertise.

Taxing residual profits presents tougher administrative challenges. Recall that for a country to measure residual profits under the bottom-up approach it must obtain information:

(i) to review transfer prices on purchases by local sales affiliates (or, in cases where the MNE operates in a market country through a PE or if it sells remotely into a market country, information to construct deemed transfer prices) including the allocable costs incurred in other jurisdictions and, where relevant, the routine profit associated with those costs; this enables it to identify the RGI of the local sales affiliate;

(ii) on the worldwide RGI of the MNE, for the apportionment of non-allocable costs; and

(iii) on total non-allocable costs, and the associated routine profit, of the MNE.[92]

Obtaining such information in a timely manner, reviewing and possibly challenging it may involve considerable administrative effort. However, there have already been significant moves in this direction in the form of the introduction of country-by-country reporting, as set out in the G20/OECD BEPS Action 13 report.[93]

d. Fairness

In Chapter 2 we noted the problems which arise when seeking to evaluate taxes on international business profit through the lens of fairness. And in Chapter 5 we discussed the grounds for taxing residual profit in the market country. Without repeating that discussion in detail, it is worth distinguishing fairness between individuals, and fairness between countries.

Let us start with individuals. With a conventional tax base, such as that used for RPA-I, the incidence of the tax may fall on a number of groups of individuals: shareholders, customers, employees and suppliers. In principle, which of these groups is worse off because of the tax – and the extent to which they are worse off – depends on the market conditions in which the business operates – for example, the product market and the labour market. As these vary according to the circumstances, it is likely that the incidence of the tax on business profit also varies. There have been many attempts to estimate the extent to which the tax is passed on to employees, but despite efforts over the last half century, there is still no definitive answer to this question – at least partly because it is likely to differ between businesses.[94] It is therefore extremely difficult to say whether a tax on business profit is likely to be progressive.

However, in evaluating a switch from a conventional tax to the RPA-I, the key characteristic is that there is a change in where the tax is levied, even if there is no change in the aggregate tax base - for example, wages would be still deductible, capital expenditure still subject to depreciation provisions, and interest also still deductible. However,

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[92] Less information is required under a top down approach: worldwide residual profit, worldwide RGI and domestic RGI.
[93] Schreiber (2018) p.268 et seq.
[94] For recent studies see: Suárez Serrato and Zidar (2016); Fuest, Peichl and Siegloch (2018).

changing – in part – the location of the tax is likely to affect its incidence. Taxing on an origin basis tends to drive mobile capital away from high tax countries, leaving immobile factors in those countries to bear much of the incidence of the tax. Partially replacing a tax on an origin basis with a tax on a destination basis (through residual profit) will diminish these effects. However, it is more likely to lead to part of the incidence being borne by consumers in the market country. The RPA-I is therefore likely to have a different incidence than a conventional origin-based tax; but these reflect changes in the incidence between individuals located in different countries. It is difficult to say whether these effects are more or less fair compared to the existing system.

In comparing the position of tax authorities and governments, the RPA-I allocates taxing rights over residual profit to market countries, which – in the absence of "presence" that meets current permanent establishment criteria have no taxing rights at present.[95] By contrast, existing systems allocate taxing rights to countries where production and development activities take place, which under the RPA-I would tax routine profit realized there, but not – except to the extent that final sales also occur there - the residual profit. However, to the extent that MNEs are currently able to follow the "entrepreneurial model", by declaring a routine profit in places where they have real economic activities and costs, and a residual profit in tax-favoured jurisdictions, then the disadvantage from the RPA-I to the former would be less pronounced.

Further, compared to pure destination-based options – such as a formulary apportionment system based on the destination of sales, or the DBCFT described in the next chapter - the RPA-I does offer some compensation in the form of taxing rights for routine profit related to product development activities and other activities. This may arguably make the RPA-I more clearly aligned than pure destination systems with a traditional understanding of fairness in the international allocation of taxing rights between countries.[96]

Also, compared to these other options, the more traditional approach of the RPA-I alleviates concerns about allocating profits from established jurisdictions to new market jurisdictions. Under sales-based formulary apportionment, for example, the development costs of products aimed at new markets would effectively be offset against revenues from existing products in existing markets. Under the RPA-I the higher costs and potentially lower unit revenues incurred in a new market country would be borne

[95] Schön (2010) p.256 et seq..
[96] Schreiber (2018) p.259 et seq.

by that country rather than spread to all markets. The impact of new markets is discussed further in Section VI.5.d.

e. Incentive compatibility

We now consider the incentive compatibility of the RPA-I in the context of it being universally adopted. Specifically, we address the question of whether, if all countries maintained the RPA-I, there would be an incentive for countries to reduce their tax rates, or to engage in other forms of tax competition that would undermine the tax base?

These questions are difficult to answer since governments typically must consider two factors that point in opposite directions. They typically would like to raise more revenue from business taxation, or at least not to raise less revenue. That involves keeping tax rates relatively high and attempting to combat tax planning that shifts profits elsewhere to tax-favoured jurisdictions. Yet they would also like to make their jurisdictions more attractive to MNEs that may locate their real activities there, and possibly also their profits there. Under the existing system, countries have followed both strategies - closing loopholes to make profit shifting more difficult, but also reducing tax rates and relaxing the definition of taxable profit to make their countries more attractive to inward investment. The RPA-I adds more complexity to these questions since there are two levels of taxation, with countries potentially choosing to tax routine and residual profits at distinct rates.

To begin with, the taxation of residual profit under the RPA-I is designed to be relatively immobile, by allocating it to the market country. It is reasonable to suppose that individual consumers are relatively immobile – businesses cannot generally choose to "move" them to low tax countries. This suggests that countries can set their tax rates on residual profits without concerning themselves too much with the rates set by other countries. However, some caveats are in order. As noted above, where the customer is a business, it may be more mobile. That may be the case for a bona-fide business that seeks to reduce its cost by locating in a low-tax country, and thereby reducing the taxes on residual profit of its suppliers. It may also be the case that businesses attempt to use tax planning strategies such as sales through unrelated distributors which, unless countered successfully, would mean that they could benefit by making use of low tax jurisdictions. This suggests that the location of real economic activity, as well as

profit, could still depend on the taxation of the residual profit in the market country. In turn and as a result, there would be some downward pressure on rates applied to residual profit. However, it seems likely that such downward pressure would be much weaker compared to the existing system.

The other element of the RPA-I is the taxation of routine profit where costs are borne. As noted above, the benefits to multinationals of moving activities to countries with a low tax rate on routine profit are limited, because the tax is based only on the routine profit. This could suggest that the incentives for countries to compete for these activities would be weaker than under the existing system (although that depends on the extent to which businesses already shift residual profit to tax-favoured jurisdictions). On the other hand, countries which are interested in attracting economic activity would have to compete even more aggressively through their tax rate to make it economically attractive for businesses to move such activities.

While neither tax rate, on residual or routine profits, is likely to be as important to location decisions – of real economic activity and of profit – as existing tax systems, it seems likely that the tax rate on residual profit would matter less than the tax rate on routine profit. This would suggest that countries may choose a higher rate for residual profit than routine profit. In the extreme, if competition drove down tax rates on routine profits to zero, then the resulting tax system would purely be a tax on residual profit on a destination basis.

Another element of the tax system which may be at least partially controlled by the tax authorities or legislators is the determination of routine profit on a MNE's functions and activities. If this is set as envisaged, by reference to comparables, then tax authorities may have little impact on the routine profit. However, there are incentives for governments, depending on the relative tax rates in countries of routine profit and residual profit, to manipulate this routine profit. On the one hand, they would like to recognise a high routine profit for activities taking place within their jurisdiction. That is likely to raise overall tax revenue – at the expense of a lower residual profit being recognised in the market jurisdiction. This is likely to be particularly attractive for low income countries with a small tax capacity. Such countries are more likely to prefer to specify a fixed mark-up, and a relatively high mark-up,[97] to ensure a reasonable

[97] They may alternative choose a higher tax rate on routine profit, although this may be more salient to businesses.
(continued)

collection of tax on routine profit.[98] Further, if the tax rate on the routine profit is lower than that on the residual profit, then tax authorities and businesses have an incentive to collude to raise the routine profit; that would result in higher tax revenue on its functions and activities, but a lower overall tax liability for the business. On the other hand, reducing the routine profit in the place of economic activity, raises the residual profit in the market country. If the tax rate on residual profit were low enough, then that would reduce the overall tax liability of the business and make it more likely to choose to locate its activity in the country which allocates low routine profits on functions and activities.

Overall, given these conflicting objectives, and the fact that the location of responses to changes in tax rates are likely to be smaller, it seems likely that there would be less downward pressure on tax rates and tax bases under the RPA-I than under the existing system - especially in relation to the taxation of residual profits.

2. *UNILATERAL ADOPTION*

We now consider the properties of the RPA-I if it were introduced in only one country, or a subset of countries. It is important to analyse the properties of the tax in this situation partly because it is perhaps more likely to be introduced in this way, rather than by all countries agreeing to move to it simultaneously. But it is also important to assess the incentives for governments to adopt the RPA-I on a unilateral basis, and to either join or leave a group of countries that may already have adopted it. We are therefore interested in the effects both on countries that adopt the RPA-I and on those that do not. We do this by evaluating the RPA-I in these circumstances against the same five criteria as used above: economic efficiency, robustness to avoidance, implementation, fairness and incentive compatibility.

a. Economic efficiency

For domestic activities within a country that adopts the RPA-I, the impact on investment and financial decisions will be broadly the same as if all countries had adopted it.

[98] This is in line with the increased pressure by developing countries to introduce "safe harbours" for the taxation of local activities of MNEs discussed in Section III.2.

As discussed in the previous section, if the RPA-I keeps the same tax base as the existing systems, then there will continue to be a negative impact on the incentive to invest, and a bias towards the use of debt finance. However, the key issue to address here is the impact of the RPA-I on the location of real economic activity.

To think through the implications of only one (or a group) of countries implementing the RPA-I, consider 3 countries. Suppose that A introduces the RPA-I, while B and C maintain their existing conventional systems. Suppose that the tax rates in the three countries are the same, and also the same in each country for both routine and residual profit; this allows us to focus on the differences in the tax base between the countries.

Suppose first that a business wants to produce and sell goods to consumers in C. It expects to earn a high rate of profit, over and above a routine return. The consumers are immobile, so that the sales must be made in C. But the business can choose to produce in any country, and (if necessary) export directly to consumers in C. If the company produces in A, then it will face tax on the routine profit earned in A. There would be no further tax in C (assuming that the business does not have a PE in C), since C does not tax on a destination basis. Whether this creates a lower tax liability than if the company produced in B depends on how it would organise its tax affairs if it produced in B.

In the simplest case, the entire return would be taxed in B. If A and B have the same tax rate, the company would therefore face a higher tax liability in B than in A, and so would have a tax incentive to locate in the RPA-I country, A. It is possible, though, that by using a variety of tax planning techniques, the company can divert its residual profit from B to country H, a tax haven with no corporation tax. This would be consistent with the "entrepreneurial model" described above. In this case, the company would face the same tax in A and B – a tax solely on routine profit. This probably represents a lower bound on the tax due in B. If so, and as long as the tax rates in A and B are equal, then the tax liability from producing in A is unlikely to be higher than that arising from production in B. Apart from the extreme case in which the company is able to shift its entire residual profit to a tax haven, country A would become a more attractive location for production by introducing the RPA-I. In general, therefore, and subject to differences in tax rates, companies would have an incentive to move their real functions and activities to countries that unilaterally adopt the RPA-I given that they will only be taxed on their routine profits there.

What about other scenarios? If the consumers were in B then the same argument would apply. What if the consumers were in A? In this case, A would levy a tax on residual profit earned on sales in A, as set out above. If A applied the RPA-I, then it would define the residual profit as net of the routine profit earned in the country of production. In this case, then there could be an element of double taxation.[99] Suppose, for example, that the company produced in B and did not plan its tax affairs to leave its residual profit in H. Then it would face a tax on its entire profit in B, and also potentially face a tax on its residual profit in A since the tax authorities in A and B would not necessarily agree on the appropriate transfer price of within-company sales from B to A. By contrast, if it produced in A, its aggregate tax base would be its total profit. At the extreme, if the company – for tax purposes in B – shifted its residual profit to H, then the double taxation would be avoided.

This then yields the same outcome in terms of incentives as if the consumers were in C; A is generally a more favourable location for production unless the company could shift its entire residual profit from B or C to a tax haven. There is one difference from the previous case though. If production is in A and consumers are in C, then only routine profit is taxed, so the advantage to locating in A is because not all profit is taxed. But if production is in B and consumers are in A, then the advantage to locating in A is that residual profit may be taxed twice if production is in B.

To the extent that not all companies shift their residual profit to a tax haven (not least because of the recent increase in anti-profit shifting measures), then the country introducing the RPA-I would become a more attractive location to undertake production. This is clearly because introducing the RPA-I would be like a move in a tax competition game between countries.[100] The RPA-I taxes only routine profit in the country of production, instead of potentially taxing all profit. For a given set of tax rates, that makes the country introducing the RPA-I a relatively tax-favoured location for production and other economic activities.

Note that the tax on residual profit in the market country should not generally affect location choices. As long as consumers are immobile, and as long as the tax does not exceed any remaining profit, then there will always be an incentive for companies to sell to consumers in a country with the RPA-I, even though they will be taxed on the

[99] Under the Schreiber and Fell proposal, A would give a credit for taxes paid in B. However, this would not generally be true under the RPA-I.

[100] For a similar argument see Avi-Yonah, Clausing and Durst (2009), p.519 et seq.

residual profit. However, this claim does not hold in one respect. Companies that purchase capital goods, intermediate goods and component products from other companies may face an incentive to locate outside the RPA-I country. That is because companies selling into the RPA-I country would face the tax on their residual profit in that country, which may be reflected in the price charged to the buyer. If a country unilaterally adopts the RPA-I, companies would therefore have an incentive to purchase such goods in affiliates located in states which did not introduce the RPA-I. This would offset the benefits of locating in the RPA-I country.

Note that although we have used the example of "production" in discussing the implications of the RPA-I, the discussion applies to all functions and activities, which would be subject to tax under the existing system, including sales and marketing expenses, R&D and G&A.

Broadly, in sum, introducing the RPA-I unilaterally would generally make that country more attractive for location decisions. This is essentially because it is effectively a step in the tax competition game, reducing the tax base in locations where economic activity takes place, and replacing them with a tax base (or a higher tax base) in the destination country. Yet in terms of worldwide economic efficiency, since unilateral adoption would be more likely to affect MNE location decisions, it could result in higher social costs. How far this happens depends on the extent, and speed, to which other countries follow suit; we discuss that further in section e below.

b. Robustness to Avoidance

We have already discussed the robustness of the RPA-I if all countries adopted it. The difficulties discussed above with respect to third party distributors, and other issues, would continue to be important if a single country adopted it. However, two of the main advantages relative to the existing system would have less force, and indeed may make avoidance a more difficult problem for other countries.

Recall that the RPA-I ignores within-company flows of debt. A single country introducing the RPA-I would benefit from this advantage. However, other countries might be disadvantaged. Suppose again that country A introduces the RPA-I, but that country B does not. Then a MNE may lend from its affiliate in A to its affiliate in B. B may continue to give tax relief for the interest paid to A. But if A does not tax the inflow of interest, then it creates an incentive to undertake such a loan, to strip profit out of B. This

potentially creates a disadvantage for B – and other non-adopters of the RPA-I. How serious a problem this is depends on whether companies in B can already use these techniques to shift their profit to existing tax havens, and whether B introduces effective limits to interest deductibility to combat such planning.

The same issue arises for intangible assets. Country A would tax the routine profit associated with the creation in A of an intangible asset. But it would not tax any income flowing into A from other members of a multinational group as a license or royalty payment for using the intangible asset. If that payment is deductible in the country from which it is made, then again A is in effect operating as a tax haven for the purposes of this type of income. And again, the importance of that depends on the opportunities that MNEs already have to divert income in this way to tax havens or can introduce effective limits to deductions for such payments.

The adoption of the RPA-I by a single country may therefore aggravate the problems of base erosion and profit shifting in countries that did not implement the RPA-I. The quantitative impact of additional profit shifting opportunities on other countries is hard to gauge: MNEs already have many opportunities to shift profits to low rate jurisdictions. And the impact will depend on the particular circumstances, being greater, for instance, if the adopter is a large and initially high-tax country. Non-adopters might be likely to respond by strengthening anti-avoidance rules, such as thin capitalisation rules, or by introducing withholding taxes.

c. Ease of Administration

We discuss implementation issues in detail below. Here we simply identify issues that arise in the specific case of unilateral adoption.

Introducing the RPA-I unilaterally poses no specific problems for the taxation of routine profit. But it may make the calculation of residual profit more difficult. If all countries introduce the RPA-I, then the routine profit will be determined by the country in which the economic activity takes place, where functions are located. Although there may be an incentive for the tax authority in this country to collude in inflating the routine profit, the fact that there should be a routine profit agreed, and hence a well-determined, (deemed) transfer value of a good or service provided to, or allocated to, the market country, provides a basis for the market country to determine the appropriate deduction in determining the residual profit.

But suppose a company operates in country B, which did not introduce the RPA-I. The company has significant costs of all forms in B and produces a good which it sells to another affiliate in the market country A; A does introduce the RPA-I. To implement a tax on residual profit, the tax authority in A would need information on the costs incurred in B, as well as the routine profit associated with those costs. This may be more difficult if the tax authority in B does not split profit into its routine and residual components.

In practice, it is possible that A may choose simply to recognise a deduction for the profit declared in B, even if it is not restricted only to routine profit.[101] If this is higher than routine profit this would of course reduce the tax collected in A. But this would also reduce the potential problem of double taxation noted above. But – as with the case of remote sales - A may also be able to exercise leverage by proposing to levy tax on gross revenues realized there with no allowance for routine profit taxed elsewhere, unless the company produces credible evidence on its cost incurred elsewhere.

d. Fairness

Unilateral, as opposed to universal, adoption of the RPA-I does not add very significant considerations with respect to fairness. Two that should be addressed are the possibility that worldwide profit may be taxed more or less than once in total, and that a country introducing the RPA-I may create a disadvantage to another country. Yet neither of these is necessarily problematic.

As we argued in Chapter 2, the notion of single or double taxation is not very helpful. Double taxation applies in existing systems where businesses must remit tax on their profit and again on sales (through VAT or a sales tax, for example). In popular debate these taxes may be thought to fall on different economic actors (shareholders and customers respectively). However, the reality is more complex, and if it is often very difficult to determine who is actually worse off because of a tax.

In the cases described above, it is possible that one country seeks to tax the whole profit of a company under the existing system, whilst another also seeks to tax the residual profit. That may seem to introduce an element of unfairness overall, but is

[101] Where the tax rates in the two countries are the same, this would be equivalent to the Schreiber and Fell proposal which would give a credit for taxes paid in B.

simply the result of two countries operating different tax systems. Imagine that the market country gave no relief at all for the costs of the business arising outside its country. This would turn the tax on residual profit into the treatment applied under an excise tax, a sales tax, or VAT. If one of these taxes on the value of the sale is not thought to be unfair, then it is hard to see why it becomes more unfair if relief is actually given for those costs incurred elsewhere.

The disadvantage that arises for non-adopting countries mirrors that which arises under any form of tax competition. If – under the existing system or the RPA-I - country A reduces its tax rate, then businesses have an incentive to shift activity to A from other countries. And in addition under the RPA-I, businesses may find it easier to shift profit into A from other countries, for example, by paying interest or royalties to an affiliate in A. These issues arise whenever tax systems are not the same across countries.

e. Incentive Compatibility

We have already discussed the issue of incentive compatibility above in the sense of whether a country has an incentive to reduce its tax rates when all countries have adopted the RPA-I. We now ask whether a single country would want to implement the RPA-I unilaterally, and what incentives adoption by one country would create for non-adopters.

As discussed above, in terms of the location incentives created by the RPA-I, these are generally favourable to the country implementing the RPA-I. Broadly, the RPA-I would partially shift the tax base from being in the place of origin, to the market country. To the extent that the customers of a business are immobile, then the overall tax base would be less mobile. As noted above, this would probably lower the competitive pressure to reduce the tax rate both for routine profit and residual profit. In the extreme case in which businesses pay tax under the existing system only on routine profit, then incentives under the RPA-I would be no different. But in all other cases, the incentives would point towards adoption of the RPA-I. Introducing the RPA-I could therefore be seen as a move in a tax competition game between countries to reduce the effective tax rate on more mobile tax bases by reducing the tax base in the location of functions and activities. Countries with a RPA-I would then also lose less revenue from reducing the tax rate on routine profit, thereby encouraging still greater competition. But this depends on the mobility of functions and activities . Countries which consider the

corporate tax on profits from production activities to reflect to a large extent location-specific rents – and which therefore would be reluctant to take part in tax competition – would be less inclined to give up their claims on residual profits.

So, there would appear to be in many cases an advantage to moving to the RPA-I rather than keeping the existing system. However, a more extreme move in the tax competition game would be to move completely to a destination basis and leave the origin basis altogether. A country introducing the RPA-I might therefore be outflanked by others introducing a pure destination-based tax, such as the DBCFT.

VI. IMPLEMENTATION

The RPA-I would allocate routine profits based on functions and activities and residual profits to market jurisdictions. We have set out above the key elements and properties of such a tax. But a number of practical issues must be resolved before it could be feasible. The section below discusses the most important issues. Note that some difficulties arising in the current system would remain – the distinction between debt and equity finance, for example. We do not address these here, but instead focus on the new issues that would be raised if the RPA-I were implemented.

We discuss practical issues under five main headings: the scope of the tax; the boundaries of the multinational; the tax base; identifying the place of destination and collecting tax in that location; and legal issues arising from the possible need to overturn existing treaties.

1. Scope

The problems of the scope of taxes on business profit are common to all tax systems, and have been discussed in Chapter 5. From the perspective of economic efficiency, it is desirable to tax all business income – both the return to capital and the return to labour - in the same way, to avoid any distortions to the legal form of businesses and to avoid to giving one form of business a competitive advantage over another. However, this may conflict with the administrative and compliance burden on small businesses and revenue authorities. In practice, in most countries – though not all - incorporated businesses are liable to a separate corporation tax, but the profits of unincorporated businesses are allocated to the business owners and are liable to personal income tax. Of course, this is not universal. By contrast, VAT is normally applied to all businesses over a certain turnover threshold.

The RPA-I is designed to address international issues in the allocation of profit between countries for taxation. It is not designed to address the problems arising from the interaction of taxes on business profit and personal income taxes. Nevertheless, the question arises as to whether it is feasible to apply the RPA-I to business income that is subject to personal income tax, as well as to business income that is subject to a separate corporation tax.

In considering the taxation of residual profit in the market country, this distinction should not apply. In principle, it would seem reasonable to apply the tax on residual profit to all sales in a country, irrespective of the legal form or size of the business selling in that market that would treat businesses selling in that country equally with respect to their residual profit.[102] It may be that for practical reasons, it would be prohibitively expensive for the tax authority in B to collect revenue from a very small business in A. That may suggest some threshold to be applied, which we discuss further below.

To consider the tax on the routine profit, suppose that the RPA-I was introduced by country A only for businesses that currently face a separate corporation tax. That would imply that a business in country A that is not liable to corporation tax would pay tax on its total profit in A, as under the current system. But if that business also exported to B (which has an RPA-I that applies to all business), then it would face a competitive disadvantage, since it would also be liable to tax in B on its residual profit. That suggests that if the market country taxes the residual profit of all business selling in that country, then the origin country should limit itself to taxing the routine profit of all businesses.

Of course, this issue would not apply for businesses that were purely domestic – that did not export or import any goods or services. The combination of the tax on routine and residual profit would leave such businesses unaffected by the introduction of the RPA-I, as long as the tax rates on routine and residual components were the same. It would be simpler for such businesses to not have to distinguish between routine and residual profit. For businesses with modest exports, there would be a trade-off between the competitive disadvantage and the greater complexity in identifying routine and residual profit separately. It could be left for small businesses to elect in the origin country whether they prefer to be taxed on their entire profit, or whether they would prefer to be taxed only on their routine profit.

[102] A related but separate issue has been discussed in section III.4.1 above. Businesses should be taxed on their residual profit in a market country whether they sell their goods and services in that country through a subsidiary, a branch or remotely. The RPA-I is neutral in the treatment of these different options for cross-border sales.

2. Boundaries of the multinational

Since the RPA-I contains one element of an apportionment system, for non-allocable expenses, a question arises as to what businesses should be included in this allocation. This is an issue that we discussed in Chapter 4 in the context of formulary allocation systems. As we noted there, the idea of an allocation mechanism is that there is a clear-cut division between independent businesses and integrated groups. But there are many situations where the situation is less clear-cut, for example, when individual subsidiaries have to comply with the interests of minority shareholders or when two businesses engage in joint ventures.

In determining what constitutes part of the multinational business, it is necessary to trade-off two competing objectives.[103] On the one hand, it would be useful to have a simple and clear definition, based on the parent's ownership of, or voting rights in, an affiliate business. This is the approach taken, for example, by the European Commission in its CCCTB proposal. On this approach, in order to be included the multinational should own at least 50% of the affiliate, and have at least 75% of the voting rights.[104]

On the other hand, an affiliate that is 49% owned by the multinational would in many cases be indistinguishable from one that is 50% owned. Arbitrary bright-line tests - such as a 50% ownership rule – tend to encourage businesses to organise their affairs to be just the more favourable side of the line for tax purposes. Depending on circumstances, a multinational may want to include, or not include, an affiliate in its overall RPA-I assessment. This could distort business decisions, sometimes with real economic consequences, and also create greater complexity.[105]

In practice, however, accounting treatment is typically based on the 50% ownership rule. It is perhaps unlikely that a MNE would be willing to adjust its financial

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[103] Schön (2007) p.1073 et seq.

[104] Art.5 CCCTB Draft Directive supra

[105] In principle, it would be possible to include a proportion of an affiliate in the RPA-I allocation, rather than have an all-or-nothing rule for inclusion. For example, the proportion included could be based on ownership; if the multinational owned 49% of the affiliate, then 49% of its non-allocable expenses could be apportioned with the multinational, and 49% of its RGI or sales would be included as part of the allocation formula. But this approach would clearly contribute to greater complexity.

statements significantly in order to manipulate the bright line for tax purposes. So following a 50% ownership test seems a reasonable compromise.

3. Defining the tax base

Under a system of formulary apportionment, the principle is that total profit should be determined and then allocated between jurisdictions. This raises the question of the need for harmonisation of the tax base. If jurisdictions use different definitions of the tax base, then there will not be an agreed measure of total profit. Each jurisdiction may then base its own entitlement on its own measure of profit. To prevent this, the European Commission plans first to harmonise the tax base – the Common Corporate Tax Base (CCTB) - before consolidation across member states is introduced.[106] US states do not have common definitions of the tax base, but they are broadly similar, drawing from the federal tax base.[107]

As noted above, since there is an element of apportionment under the RPA-I, the question arises as to whether the RPA-I requires a common base. The answer to this question is that it seems probable that a reasonable outcome could normally be achieved without the need for harmonising the tax base. Three elements of the RPA-I should be considered.

First, current international transfer pricing under the OECD Guidelines or the U.S. Regulations do not presuppose a common set of accounting rules in all involved states. While such a common set might be helpful in order to avoid unintended cases of double taxation or double non-taxation, there is no reason to believe that the problems arising in the absence of a common set of rules would be greater under the RPA-I than under the existing system. As a matter of substance, there is a need to determine transfer prices for trade between affiliates of a single multi-national group (and deemed transfer prices in the case of PEs or remote sales), based on the expenditure of one of the affiliates plus the routine profit.

If there is no common tax base, then the definition of what is allowable expenditure for the purposes of identifying the routine profit on functions and activities in

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[106] European Commission, Proposal for a Council directive on a common corporate tax base, COM(2016) 685, 25 October 2016.
[107] Hellerstein (2013).

a jurisdiction could differ between the countries involved in a trade between two affiliates. This requires the identification of those items of expenditure which constitute the base for the calculation of routine profit , a task that can be fulfilled on the basis of specific information from both financial accounts and tax accounts without full harmonisation of the domestic tax base. One issue here is how to treat special provisions, for example, incentives for R&D. As proposed above, the straightforward approach is that such provisions should not affect the transfer prices, but that the country offering the incentive should determine any adjustment to the tax liability separately, leaving the tax base in other countries unaffected.

Second, the RPA-I requires the allocation of non-allocable expenses to countries. This is more akin to the formulary apportionment approach, ideally based on a commonly agreed value of the expenses and associated routine profit. Again, with different tax bases, these valuations could differ between countries. Again, however, the allocation could be achieved using financial accounts and tax accounts. To the extent that a country wanted to be more or less generous in its treatment of specific non-allocable expenses, then it could again make an adjustment, without affecting the common book value used in the apportionment.

Third the apportionment of non-allocable costs should ideally be based on a common definition ofresidual gross income (RGI). Again, this factor could be calculated by reference to book values. If countries were unwilling to do this in respect of RGI, and their measures of RGI were significantly different, this might suggest using sales revenue as a more straightforward measure, despite the disadvantages discussed elsewhere in this Chapter.

However, the bottom line is that – primarily by basing transfer prices and apportionment factors on book values - the RPA-I could reasonably avoid the complications of agreeing a common tax base.

4. Collecting tax on a destination basis

A key element of the RPA-I is that residual profit is taxed in the market country, or the country of destination. To make the RPA-I operational, it is necessary to define this location more precisely. We have discussed the notion of destination in Chapter 5, where we set out the notion of the customer location proxy, borrowed from VAT, and

defined as “the location, residence, or place of business of the customer, the person to whom the seller has a contractual legal obligation to supply the goods.”

Applying this approach to the sales of goods should be relatively straightforward. The location of individual and even business consumers purchasing goods can be easily identified where the sale is through an affiliate of the MNE; a MNE can reasonably be assumed to know the location of all third-party sales made by its affiliates. Assuming the MNE affiliate (whether a subsidiary or a PE) making the ultimate sale is in the jurisdiction of sale, that would be the entity taxed on any residual profit from the group’s sales of products in that jurisdiction, plus on any routine profit it may derive from marketing, distribution and any other activities in that country.

Other situations, however, raise more difficult issues that are specific to the RPA-I: sales to unrelated business customers of intermediate and component products , sales of final products through unrelated distributors, remote sales, and the treatment of new market countries. We have discussed many of the problems – and potential solutions - relating to these issues above; the discussion here is therefore relatively brief.

The location of sales of intermediate goods to unrelated parties raises difficult issues. Such intermediate goods would include capital goods, and also goods incorporated in other products typically either by transformation (e.g., chemical processing) or assembly (e.g. installing semiconductors on a circuit board).

There are at least three places which might be considered as the location of the sale of the intermediate good. First, it might perhaps be logical to trace through the intermediate good to a final good sold to a consumer. A second option would be simply to identify the location of the sale as the place of residence of the business purchasing the good. And a third option would be to identify the jurisdiction in which the purchaser uses the products purchased.

The first might be more appropriate where the business purchasing the good did relatively little to change the nature of the intermediate good itself, but simply sold it on, for example as a wholesaler. However, the seller of the component or intermediate product is unlikely to have an accurate accounting of the sale location of the final product. Under the second, it would be relatively straightforward for the purchasing business to locate an affiliate in a low-tax jurisdiction. The tax on the routine profit of the purchasing company would then be kept to a minimum, as would the tax on the residual profit of the selling business. The third option would make this more difficult,

although it could still mean allocating a significant amount of income to tax-favoured jurisdictions in industries like electronics where much manufacturing has migrated to such locations over the past 20 years.

Similar issues arise in sales to unrelated distributors, as discussed above. If sales locations could again be manipulated to allocate residual profits to tax-favoured jurisdictions, then tracing the sale through to the final consumer would be more appropriate. This would require the distributor to report the location of its resales to its multinational seller. Such reporting may involve increased record keeping by some distributors and wholesalers, but it is likely many multinationals already receive substantial data on the location of these sales given their desire to keep a close watch on where and to whom their goods are sold.

One issue here is that international law requires a nexus between the person taxed or the activity being taxed and the country levying the tax. In effect the country of the final consumer would aim to tax the profits of a business in one country selling to a distributor in a third country.

As noted in Chapter 5, a business can also sell goods to consumers in a country without a physical presence in that country by, for example, selling over the internet or through catalogues. There is no reason why the consumer would have information on the residual profit of the selling business, which implies that that the tax authority must deal with the selling business located abroad directly.

Governments also already have significant experience through VAT of taxing remote sales in a destination country, even for digital products, and so VAT rules on taxing non-resident businesses might be adapted for this purpose. It may be, for example, that a withholding, or backup withholding, regime would be required of unrelated party distributors that bring goods into a country for ultimate sale to make sure that companies are reporting their transactions properly. It may also be that a relatively high minimum threshold of sales could be established to limit the burden to relatively large businesses.

Deeming a MNE to have a taxable presence in the market country goes significantly beyond anything the OECD and most countries have been yet willing to adopt in considering when a business should be treated as having a permanent establishment subject to the taxing jurisdiction of the country of purchase. However, proposals from

several countries for a tax on the profits of digital companies in the location of the user face also go well beyond existing PE rules. In this context, a recent report by the UK government stated that it did not "see collection [in such circumstances] as a significant issue and noted that the more "important question is how to ensure that, for those businesses with minimal of no UK presence, compliance with the tax does not impose significant administrative burdens".[108]

Another issue is what happens when a multinational business with potential residual profits expands into new markets. Should the residual profits be taxable in that market country from the date the business first generates such profits in that country? If the business has no losses being carried forward, then the straightforward answer would be to allocate the residual profit based on that year's sales.

But if there are losses being brought forward from earlier periods, then it could be argued that the current profits should be first allocated to those countries in which those losses occurred. That is, jurisdictions with prior year losses should be given priority in allocation of residual profits, with the new market country tax able to tax residual profits only after that priority allocation is completed. Alternatively, an arbitrary "buy-in" rule could be applied that phased in the full residual profit allocation to a new market jurisdiction over, for example, a three or five-year period. The profits not allocated during the transition would increase the residual profits of other jurisdictions that are fully phased in.

Most income tax treaties (including the OECD model treaty) require that transfer pricing between related parties be consistent with how independent enterprises price similar transactions under similar circumstances. Moreover, most such treaties eliminate origin-based taxation of intangible profits by the jurisdiction of "use" in favour of taxation by the jurisdiction that finances and manages intangible development activities. The RPA-I deviates materially from these provisions. For example, treaty country companies that sell goods or services to a related party in a country adopting the RPA-I could challenge the allocation of residual profits to that country and would be likely to be successful.

Avoiding these challenges would require amending existing treaties. At a minimum that would be a time-consuming exercise and, for countries that cannot override treaties by legislation (e.g. France, the Netherlands or Switzerland), would make adopting

[108] H.M. Treasury (2018).

the RPA-I less feasible to the extent treaty partners were unwilling themselves to adopt the proposal. Depending on the respective constitutional framework there are some jurisdictions (like Germany, the U.S. and the U.K.) where legislation can in certain circumstances override treaties. Nevertheless adopting the RPA-I by legislation would not make the concurrent breach of international treaty law go away.[109]

[109] Sachdeva (2013).

VII. CONCLUSION

This chapter has set out an alternative system, the RPA-I, for allocating international business profits between jurisdictions. The basic approach follows OECD guidelines and other proposals that have been made in distinguishing between routine and residual profit. The system allocates taxing rights over routine profits to countries where MNEs' functions and activities take place. It allocates taxing rights over residual profit to market countries, where the MNE makes sale to independent, third-party customers.

The key aims of the RPA-I are to combat profit shifting, and to reduce economic distortions to the behaviour of MNEs, although we evaluate the system according to all five of the criteria set out in Chapter 2. However, another important aspect of the system is that it is intended to be reasonably close to the existing system, to minimise the costs of transition and to make it more accessible to those with knowledge of the existing system.

Routine profit would be identified using existing transfer pricing techniques. But an important element of the use of those techniques is that they would be used to identify, as closely as possible, only the routine element of profit. Comparables used to determine routine profit should therefore be based on third party outsourcing businesses, in the form of contract manufacturers, researchers, logistic provides and marketers; the returns of such comparable businesses should not reflect the overall risk of the MNE's business.

Transfer prices within the MNE would be based on this routine profit. In calculating residual gross income (RGI) in a market jurisdiction the market affiliate would be deemed to have purchased goods and services from other affiliates at third party cost plus any associated routine profit. Residual profit allocated to that market affiliate would be equal to RGI less a share of non-allocable costs including any associated routine profit, where the share is based on the proportion of the MNE's total RGI earned by that affiliate. The RPA-I system can therefore be thought of as a hybrid; routine profit is based on existing transfer pricing techniques, whilst the allocation of residual profit introduces some elements of formulary apportionment.

The fact that residual profit is allocated to the market country has benefits both in terms of combating profit shifting and in reducing distortions in economic behaviour. This is primarily due to the relative immobility of customers. Certainly when customers

are individuals, they are unlikely to re-locate in order to reduce tax on their suppliers. This may be less true where the customer is a business, and look-through rules may be needed to identify cases where independent distributors locate in low-tax jurisdictions as part of a tax planning scheme.

The immobility of customers in the market country, combined with the relative transparency of transactions with third parties should make it difficult to shift residual profit to other jurisdictions. The incentive to shift routine profit is also correspondingly lower than the incentive to shift total profit. Basing tax on residual profit in the destination country also significant reduces the incentive for MNEs to locate their real activity in low tax jurisdictions, thereby reducing economic distortions.

One significant difference in implementation compared to the existing system is the treatment of remote sales. Currently, if a MNE resident in country A sells directly to customers in country B, without any physical presence in B, then its profit will be taxed in A. By contrast, under the RPA-I routine profits will be taxed in A and residual profit will be taxed in B. Taxation in the market country is not contingent on physical presence there under the RPA-I.

The guiding principle behind the RPA-I is immobility, but the proposal is tempered by practical considerations. The RPA-I moves towards a destination basis of taxation but stops short of full allocation to destination countries. It aims at departing from the existing system as little as possible because of the familiarity of existing concepts and the costs and difficulties in transitioning to a completely new system. Nonetheless, by partially, though coherently, moving to a destination basis of taxation, the RPA-I should partly harness the substantial benefits arising from the relative immobility of consumers, thus offering significant promise as a tax system that is fit for purpose for years to come.

Appendix A: The Algebra of the RPA

This appendix formalizes (with some simplifications) the account of the RPA, and of the RGI-RPA variant in particular, set out in the text.[110]

Denote the costs incurred by the multinational in jurisdiction *i* by c_i. Assuming for simplicity that a single mark-up μ applies to all costs, routine profits in jurisdiction *i* are thus

$$\Pi^r = \mu c_i \qquad (A.1)$$

and (ignoring taxes) residual profits are then

$$\Pi^R = \sum_i (s_i - (1+\mu)c_i) \qquad (A.2)$$

where s_i denotes third party sales in *i*.

A top-down allocation mechanism allocates this residual profit across jurisdictions as

$$\Pi_i^R = \lambda_i \Pi^R \qquad (A.3)$$

for some set of weights λ_i such that $\sum_i \lambda_i = 1$.

For the purpose of a bottom-up allocation, costs c_i are divided into two types: (i) costs that are can be allocated to sales in particular jurisdictions (in the numerical example, these are costs of goods sold and local sales and marketing), with a_{ij} denoting costs incurred in *i* that are allocable to sales in *j;* (ii) below the line costs that cannot be allocated to sales in any particular jurisdiction (costs of regional/global marketing, G&A, and R&D), denoted by z_i. Thus:

$$c_i = \sum_j a_{ij} + z_i \qquad (A.4)$$

Residual gross income (RGI) in jurisdiction *i* is then

$$g_i = s_i - (1+\mu)\sum_j a_{ji}. \qquad (A.5)$$

[110] This analysis can be thought of as applying to the aggregate of the MNE's activities or to a particular product or product line.

The top-down approach based on RGI simply sets $\lambda_i = g_i/G$ in equation (A.3), where $G = \sum_j g_i$ denotes aggregate RGI. Noting that

$$\Pi^R = \sum\nolimits_i \left(s_i - (1+\mu)\left(\sum\nolimits_j a_{ij} + z_i \right) \right) \qquad (A.6)$$

$$= G - (1+\mu)Z \qquad (A.7)$$

use being made of $\sum_i \sum_j a_{ij} = \sum_i \sum_j a_{ji}$ and denoting $Z = \sum_i z_i$, the residual profit allocated to *i* is in this case

$$\Pi_i^R = g_i - \left(\frac{g_i}{G}\right)(1+\mu)Z. \qquad (A.8)$$

The bottom-up approach instead simply apportions the non-allocable costs $(1+\mu)Z$ by RGI, that is by the proportion g_i/G, and deducts the apportioned amount from RGI. That is clearly reflected in (A.8).

Alternatively, residual profit can be calculated as:

$$\Pi_i^R = \underbrace{s_i - (1+\mu)c_i}_{(a)} - \underbrace{\left\{(1+\mu)\left(\sum\nolimits_j a_{ji} - \sum\nolimits_j a_{ij}\right)\right\}}_{(b)} - \underbrace{(1+\mu)\left\{\left(\frac{g_i}{G}\right)Z - z_i\right\}}_{(c)} \qquad (A.9)$$

where the three terms correspond respectively to: (a) sales in *i* less all costs (inclusive of associated routine profit) incurred in *i* (as in Table 2); less (b) notional transfers to other entities in the group in relation to costs of good sold, this being the amount by which costs with associated routine profit incurred in all jurisdictions attributable to sales in i exceed allocable costs incurred in *i* (as In Table 3); less (c) the amount by which I's RGI-weighted share of unallocable costs exceeds unallocable costs incurred in *i* (as in Table 5).

Using (A.4) to cancel terms in (A.9) shows that the bottom-up allocation in the latter is exactly the same as the top-down allocation in (A.8).

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