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Residual Profit Allocation by Income

1. Introduction

This chapter and the next chapter present and evaluate two alternative regimes for taxing international business profit, each of which we believe has significant advantages compared to the existing regime. The focus in this chapter is on the Residual Profit Allocation by Income (RPAI).¹

The RPAI is one of a family of Residual Profit Allocation (RPA) regimes that divide international business profit for tax purposes across countries into two parts.² In the first step of any such RPA scheme, all business functions and activities within a multinational business—research and development (R&D) activities, manufacturing, general and administrative activities (G&A), 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 multinational’s total profit less the sum of routine profit across all countries—would be apportioned across countries according to some mechanical rule.

Options within this family of regimes vary most significantly in the manner in which routine profit is calculated for the first step, and, perhaps especially, in the choice of location and apportionment rule for the second step. An important option, first proposed by Avi-Yonah, Clausing, and Durst,³ calculates routine profit through a fixed mark-up over costs and apportions residual profit to the market, or destination, country entirely by sales.⁴ The RPAI proposed in this chapter calculates routine profit using existing transfer pricing techniques. It also apportions residual profit to the destination country, however it does so using as an apportionment factor not sales but ‘residual gross income’ (RGI), defined as sales to third parties less costs attributable to those sales.

¹ An earlier version of this chapter was published as Devereux et al (2019).

² See Andrus and Oosterhuis (2017), p. 102 *et seq.* and Oosterhuis and Parsons (2018).

³ Avi-Yonah et al (2009); see also Avi-Yonah (2010); Avi-Yonah and Benshalom (2011); and Benshalom (2009).

⁴ Luckhaupt et al (2012), p. 107 *et seq.* put forward a similar model.

1.1 The RPAI's appeal

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

The RPAI, like other recently proposed RPA regimes, allocates taxing rights over residual profit to destination countries—that is, the country of a third party purchaser of goods or services. It therefore partly harnesses the benefits of destination-based taxes discussed in Chapter 4. Below we assess the RPAI against the five criteria set out in Chapter 2 that we use to evaluate any system for taxing international business profit. By way of introduction, however, 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 it is also true when the purchaser is an independent business. By apportioning residual profit 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 multinational; the value of the transaction is therefore observable, which greatly diminishes, though, as will be seen, does not 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 multinational will be less sensitive to differences in taxation between countries. For example, given the option of producing in one jurisdiction and selling in another a tax in the place of sale should not affect the location of production.

As discussed below, the RPAI should also create less economic inefficiency and be less 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 a multinational's profit. 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 should be 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 RPAI 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* profit. Moreover, as explained below, the implied apportionment of *residual* profit can also be achieved by using transfer pricing methods and concepts familiar to practitioners. The RPAI thus achieves fundamental reform, addressing many of the problems left outstanding by the BEPS project and developments since, but does so in a way that is readily comprehensible to today's tax practitioners.

The design of the RPAI is thus guided by two principles. The first is that significant benefits follow from allocating taxing rights on a destination basis, but this is tempered by, second, a principle of minimal reform. Whilst the RPAI moves towards a destination basis of taxation, it does so whilst remaining as close as possible to the existing system.

1.2 More on the RPAI

The RPAI 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 (in calculating the *routine* profit), 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 RPAI *routine* profit is determined using well-established transfer pricing methods. The right to tax this routine profit is allocated to the country in which the multinational's functions and activities take place. The concept of routine profit is familiar to transfer pricing specialists.⁵ It is the profit a third party would expect to earn for performing a particular set of functions and 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 country can be calculated as a mark-up over (certain) expenses incurred,⁶ where the mark-up is based on the rate of profit earned by comparable service providers, 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.

⁵ See OECD (2017a), Annex II to Chapter II, p. 433.

⁶ 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 allocated to the countries in which sales to independent third parties are made: the ‘destination’ (synonymously, for our purposes, with ‘market’) countries. The allocation of residual profit among 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.

In the first step, the RGI in each destination country is calculated as sales revenues in that country less all ‘allocable’ costs (by which is meant costs incurred in any country that can be directly allocated to the goods or services sold), and less the routine profit associated with those costs. Where costs are incurred in another country, the allocable cost in the destination country is based on a transfer price from that other country, composed of the initial cost plus the associated routine profit.

In the second step, residual profit in each destination country is determined as RGI, calculated as above, less a share of the multinational’s total ‘non-allocable’ costs (by which is meant those costs that cannot be directly allocated to any specific sales, e.g. R&D costs general and administrative costs and global sales and marketing costs) and the routine profit associated with those costs. The share of the non-allocable costs allocated to each destination country is equal to its share of the multinational’s total RGI.

The alternative approach (which we label ‘top-down’) is to first calculate the multinational’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.⁷

The ‘bottom-up’ approach to the RPAI is likely to appeal most naturally to practitioners steeped in the use of transfer prices to allocate profit. The ‘top-down’ approach may appeal more to economists and others familiar with the concept of formulary apportionment. But it is important to emphasize that the two approaches yield the same outcome.

Countries then tax, potentially at different rates, the routine profit and the residual profit allocated to 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 RPAI. Existing PE rules retain a role for the purposes of determining *routine* profit. A multinational’s functions and activities in a particular country are allocated a routine profit only if existing PE thresholds are met. The RPAI 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

⁷ This is shown in Appendix 2.

allocated to a local subsidiary. This again suggests using transfer prices for the sale of a good or service based on its cost plus any routine mark-up associated with that cost.⁸ PE profit attribution rules 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 RPAI 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. Under the RPAI, therefore, it is immaterial whether a multinational 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 profit is calculated in the same way in each of these settings, meaning that the RPAI does not distort behaviour along this margin.

An example, which we label the ‘entrepreneurial model’, may help to illustrate important similarities and differences of the RPAI with the existing system. Under traditional transfer pricing rules many multinationals are able to centralize their risks, and to some extent their global or regional functions and activities, in an entity, sometimes described as the entrepreneur affiliate, resident in a tax-favoured jurisdiction.⁹ Imagine then a manufacturer and seller of products that finances its R&D internally from an entrepreneur affiliate in a tax-favoured jurisdiction. It also either manufactures its products in a low cost or tax-favoured jurisdiction 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 earn 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 multinational.

The BEPS Action Plan fully recognized the tax planning opportunities presented by current tax arrangements and tried to address them by a new approach

⁸ Under the existing system, profit is attributed to PEs following a specific set of profit attribution rules (Article 7 of the OECD Model Tax Convention). These are separate from transfer pricing rules (Article 9 of the OECD Model Tax Convention). Using transfer pricing rules to attribute profit to a PE thus constitutes a departure from the existing system. However, the profit attribution rules have moved closer to transfer pricing rules under the Authorised OECD Approach (AOA) introduced in 2010. Admittedly, the take up of such rules has been somewhat limited. See Collier and Vella (2019).

⁹ OECD (2017a), Chapter IX: Transfer Pricing Aspects of Business Restructurings.

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.¹⁰ 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.¹¹

The RPAI system mimics the outcome just described, in which most affiliates of the multinational 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 RPAI.

The RPAI is not perfect. A number of weaknesses are acknowledged in this chapter, and some issues certainly merit more consideration. But we believe that the RPAI constitutes a significant improvement over the existing system, performing better on all five of our criteria. It therefore offers some promise as a system for taxing business profit for years to come.

1.3 Chapter structure

This chapter is structured as follows. Section 2 provides context to the RPAI proposal by briefly describing the current movement of the OECD Transfer Pricing Guidelines towards transactional 'profit splits'. Section 3 describes the RPAI in more detail; it sets out, at some length, each aspect of the calculations it requires and the rationale underlying them. It also briefly compares the RPAI with a limited number of alternative RPA proposals. Section 4 evaluates the RPAI proposal against the criteria set out in Chapter 2. Section 5 discusses issues of implementation. Section 6 concludes.

2. The gradual move towards profit splits

The distinction between routine and residual profit, which is at the heart of RPA approaches, is familiar to practitioners because a similar distinction is made under an

¹⁰ OECD (2017a), 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 et al (2016).

¹¹ For further discussion, see, for example, Andrus and Oosterhuis (2017), p. 89 *et seq.*, and Schön (2014), p. 280 *et seq.*

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 regime has been on for some time.

2.1 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 multinational.¹² This development reflects practical difficulties that are rooted in underlying conceptual difficulties with the arm's length principle, as discussed in Chapter 3.

At a practical level it has been acknowledged that traditional transfer pricing methods—looking for comparable uncontrolled prices or applying a cost-plus test or a resale-minus test—increasingly fail to deliver satisfactory results.¹³ 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 businesses; and that in the case of multinationals these factors can be spread across the world. More precisely, the operation of a worldwide value chain under common ownership generates profit that goes beyond the sum of the profit that would be derived by the individual group entities in an open-market situation.¹⁴ These synergies (and the economic rents generated by them) are not only hard to capture in practice—there is not even in principle any unique way of allocating them to specific corporate units or geographical locations.¹⁵

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

¹² See Vann (2003b), p. 152 *et seq.* and Wittendorff (2016). For recent materials see OECD (2014a, 2014b, 2017a). For a historical analysis of the secular movement towards profit splits see Li (2002), p. 857 *et seq.*

¹³ For further discussion, see, for example: Avi-Yonah (1995); Rosenbloom (2005); Couzin (2013).

¹⁴ For discussion, see: Avi-Yonah and Benshalom (2011), p. 378 *et seq.*; Elkins (2017), p. 158 *et seq.*; Li (2002), p. 832 *et seq.*; Schön (2010), p. 231 *et seq.*; Luckhaupt et al (2012), p. 100 *et seq.*; Vann (2003b), p. 139 *et seq.*; Vann (2010), p. 321 *et seq.*

¹⁵ See Keuschnigg and Devereux (2013); Kane (2014).

have been at the very centre of the profit shifting activities targeted in the BEPS project and initiatives since.

Against this background, in 2018 the OECD put forward the ‘Revised Guidance on the Application of the Transactional Profit Split Method’¹⁶ (OECD Revised Guidance) which is the latest in a series of moves towards formulary methods. This emphasizes 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 profit of a multinational 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 multinational, the pricing of intra-group dealings will be built on ‘comparable uncontrolled prices’, the ‘cost-plus’ method, or the ‘resale-minus’ method.¹⁷ 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 entity. But it is also clear that this ‘routine profit’, corresponding to the earnings of an outsourced provider of that sole function, cannot logically include the profit derived from the synergies generated by the business as a whole.

In a second step, those functions within the multinational come to the fore, which—due to their highly integrated nature¹⁸ or due to the influence of unique and valuable intangibles as key sources of profit¹⁹—are not amenable to traditional transfer pricing examination. The same is true of entities within a multinational which contractually share in the overall business risk of the business.²⁰ 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 integrated businesses on a case-by-case basis. The main basis for the allocation of the residual profit is the relative value of the ‘contributions performed by the separate affiliates within the firm—either asset-based or cost-based.’²¹ This reflects the underlying assumption that all locations where the business is present contribute to the residual profit and thus justify taxation.²² The allocation of profit amongst these locations will involve

¹⁶ OECD (2018d); this revised guidance replaces Section C, Part III, Chapter II of the OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations.

¹⁷ OECD (2018d), paras 2.127, 2.152; see also, in a similar vein, Avi-Yonah (2010), p. 16 *et seq.*

¹⁸ OECD (2018d), paras 2.120, 2.133 *et seq.*

¹⁹ OECD (2018d), paras 2.119, 2.130.

²⁰ OECD (2018d), paras 2.121, 2.139–2.142.

²¹ OECD (2018d), paras 2.114, 2.150 *et seq.*, 2.169 *et seq.*, 2.179 *et seq.*; for a similar proposal see Schön (2010), p. 246 *et seq.*

²² For a theoretical argument for this kind of profit split see Vann (2010), p. 321 *et seq.*

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 business profit to the involved entities insofar as it exceeds the routine profit 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 business), but also in a higher volatility of net results (given the necessity to allocate residual losses in the same fashion as residual profit).²³

According to the OECD guidance, 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, for example whether information on comparable uncontrolled transactions is available.²⁴ The more integrated a business is and the more hard-to-value its intangibles are, the less it seems possible to resort to those traditional methods and the more prevalent becomes the need to apply a profit split.

2.2 OECD profit splits and RPA schemes: similarity and differences

The distinction between routine and residual profit 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 RPAI.

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

Second, RPA schemes apply to all multinationals (defined broadly), while profit splits are applied only to multinationals with certain characteristics, such as

²³ OECD (2018d), para. 2.115.

²⁴ OECD (2018d), para. 2.143.

high-integration and strong reliance on hard-to-value intangibles, and even then they apply differentially among affiliates of such multinationals. In the latter case, the OECD Revised Guidance distinguishes between entities that are assigned routine profit and entities that are assigned the residual profit.²⁵ The OECD's approach has the weakness that the level of a subsidiary's integration within the overall value chain of a multinational 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 multinational 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.²⁶ 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 out-sourcing and therefore makes taxation more relevant in determining the boundaries of the business. By using the full complement of transfer pricing methodology, the OECD approach—and, in relation to routine profit, the RPAI approach set out here—seeks to approximate the tax treatment of dependent and independent businesses, which is the basic rationale for the arm's length principle.

The benefit of doing so becomes clear when comparing a multinational'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 profit' to individual entities to the extent that these closely approximate the profit an outside contractor would earn. As long as only routine profit is allocated to the manufacturing subsidiary, the tax burden on the remaining part of the multinational 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.²⁷

Fourth, while the OECD approach allocates taxing rights over residual profit on an asset or activity basis—albeit in a rather unprescriptive manner—the RPAI

²⁵ For a critical view see Robillard (2015), p. 448 *et seq.*

²⁶ Avi-Yonah et al (2009); Luckhaupt et al (2012), pp. 110, 114.

²⁷ The distortions created by formulary allocation of profit within a business as opposed to the allocation of profit to independent contractors are highlighted by Hines (2010).

and other RPA schemes allocate taxing rights over these profit to destination countries. As discussed in general terms in Chapter 4 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.

3. The RPAI in outline

3.1 An example and some terminology

In order to explain the RPAI proposal as clearly as possible, we will make use of an ongoing example. We set out this example first in Table 6.1, and then describe how the tax would be applied.

Table 6.1 Basic example: third party costs 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
Costs				
<i>Allocable costs incurred by each affiliate</i>				
Purchase of intermediate goods		200		200
Other cost of goods sold		340 ¹		340
Sales & Marketing: Local	200	40	180	420
<i>Total allocable costs</i>	<i>200</i>	<i>580</i>	<i>180</i>	<i>960</i>
<i>Non-allocable costs incurred by each affiliate</i>				
Sales & Marketing: Global	200			200
General and Administrative (G&A)	100			100
Research and Development (R&D)	300			300
<i>Total non-allocable costs</i>	<i>600</i>	<i>0</i>	<i>0</i>	<i>600</i>
Total Costs	800	580	180	1560
Global Profit				840

1. This reflects per unit costs of 2 per unit for the variant sold in C, and of 1.5 for the variant sold in A and B.

We consider a multinational with three affiliates located in different countries, A, B, and C. Each affiliate sells a single finished good to local consumers. In total, ninety-six units are sold in A, twenty-four units are sold in B, and eighty 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 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, and in line with the higher price charged for the product in C, it has costs of 2 per unit for the specification sold in C, but of only 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 multinational has other costs: local sales and marketing costs, which are incurred where goods are sold; and costs of global sales and marketing, general and administrative (G&A), and research and development (R&D), all of which are incurred in country A. We briefly define these terms in Box 6.1.

All of these costs 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 RPAI, and how each is allocated to each country.

Box 6.1 Some definitions of costs

Allocable costs: Costs that can be allocated directly to specific goods and services sold. 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 costs for sales and marketing.

Non-allocable costs: Costs that cannot be allocated directly to specific goods and services sold. In our example, these include general and administrative (G&A), research and development (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,²⁸ labour costs, and the costs of storage, shipping, and depreciation.

²⁸ 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).

General and Administrative (G&A) costs: Operational costs that cannot be directly related to the production of any specific goods or services, including some or all costs relating to 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 cost, and which are an allocable cost), or they could be general costs not for a specific market (which we label a global cost, and which are a non-allocable cost).

3.2 Routine profit

3.2.1 What is routine profit?

As set out above, the concept of routine profit is familiar to transfer pricing specialists.²⁹ 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 multinational, 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.³⁰

Such third party outsourcing businesses appear to 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.³¹

The concepts of routine and residual profit 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 6.2 discusses the

²⁹ OECD (2017a), Annex II to Chapter II, p. 433.

³⁰ Note that the notion of a routine profit is not inherently linked to that of a ‘routine activity’ often encountered in discussions of transfer pricing. The RPAI does not distinguish between routine and non-routine activities.

³¹ 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 multinational to which it sells its intermediate goods or services.

similarities and differences between routine profit and the normal return, and between residual profit and economic rent.

Box 6.2 Is residual profit equivalent to economic rent?

Suppose a multinational business wants to undertake an investment project and could undertake it directly or pay an independent contractor to undertake it. The contractor would require a normal return on its investment which reflected only the risks faced by the contractor. These risks would not include the general risks faced by the multinational employing the contractor.

The routine profit of the multinational for the purposes of the RPAI is the normal return the contractor would require. It may differ from the normal return required by the multinational had it undertaken the investment itself—as this should also reflect the underlying risk of its entire business. The residual profit of the multinational for the purposes of the RPAI is profit earned in excess of this routine profit.

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 purposes of the RPAI for the latter approach could be evaluated by comparison with such an independent contractor. This may differ from the normal return to the multinational, which should reflect the entire risk borne by the multinational, which will depend also on whether or not the research is successful.

The risk of the multinational business is likely to be greater than that of the independent contractor; and in this case the multinational's routine profit for the purposes of the RPAI will be lower than its normal return, and its residual profit will exceed its economic rent. However, this is not inevitable, since the relevant measurement of risk is how the returns of a project are expected to covary with returns from other projects; so it is also possible that residual profit could be less than economic rent.

In practice there may be many reasons why the ex-post rate of return of a contractor may differ from its expected ex-ante normal return. For example, 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 multinational using such a contractor as a comparable for the purposes of identifying its routine profit for the RPAI 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.

3.2.2 Where is routine profit deemed to arise?

Routine profit is in principle 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 multinational 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.

3.2.3 Measuring routine profit under the RPAI

In the RPAI system, routine profit is measured following existing transfer pricing practice that relies on public third party comparable outsourcing 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 applied to the costs of the multinational.

An important preliminary question is which costs should be eligible for a mark-up to determine routine profit. To begin to answer this question, we start from the perspective of economic efficiency, which implies that trade between businesses along a supply chain should not be taxed. This is a basic principle arising from the ‘production efficiency’ theorem of Diamond and Mirrlees (1971), described in Chapter 2. The reason is intuitive; suppose that intermediate goods and services, bought and sold along a supply chain, were subject to a tax on the value of the sale. Then the impact of the tax would cumulate—or ‘cascade’—along the supply chain, creating potentially large economic distortions.³²

This problem could also potentially occur within the RPAI. An example is presented in Table 6.2. Suppose that a good is produced in a three-part production process. Each part uses labour at a cost of 100. Within a combined business, the costs are therefore 300. Suppose the required rate of return for this business is 10%; in a competitive market, this implies that the business must sell the good for 330 and earn profit of 30.

Now suppose that the three parts of the production process are divided into separate entities along a supply chain. Business X uses 100 of labour to create an intermediate good that it sells to Y. Y uses that input, together with 100 of labour, to produce a second intermediate good that is sold to Z. Z uses the input from Y, also together with 100 of labour, to produce the final good. In a competitive market, the total profit that X, Y, and Z can earn together must be 30. If Z tried to charge more than 330 for the final product then it could be undercut

³² This problem does not arise with VAT—or the DBCFT analysed in the next chapter—as long as at each stage of the supply chain the purchasing business can claim back the VAT (or DBCFT) that has been charged in the business’ inputs.

Table 6.2 Establishing routine profit

	No tax	RPAI with routine profit of 10	RPAI with mark-up of 10% on all costs
Labour costs in X	100	100	100
Profit in X	10	10	10
<i>Rate of return on total costs in X</i>	<i>10%</i>		
Taxable profit in X		10	10
Tax in X		2	2
Price of sale to Y	110	112	112
Labour costs in Y	100	100	100
Profit in Y	10	10	10
<i>Rate of return on total costs in Y</i>	<i>4.8%</i>		
Taxable profit in Y		10	21.2
Tax in Y		2	4.24
Price of sale to Z	220	224	226.24
Labour costs in Z	100	100	100
Profit in Z	10	10	10
<i>Rate of return on total costs in Z</i>	<i>3.1%</i>		
Taxable profit in Z		10	32.62
Tax in Z		2	6.52
Sale price to customer	330	336	342.76

by another business operating as a single unit. The prices of the intermediate goods should therefore reflect the final sales price of 330 and a profit of 10 for each business, representing an even distribution of the total profit of 30 between the three businesses.

The resulting transfer prices between X and Y, and between Y and Z, are shown in Table 6.2. In the absence of tax, X sells its intermediate good to Y for 110 and Y sells its intermediate good to Z for 220. In each case, the business earns a rate of return of 10% on its labour costs. But note that for Y and Z this is a lower rate of return relative to its total costs. That is because Y has labour costs of 100 but must also purchase the intermediate good from X for 110, so that its total costs are 210. For Y, profit of 10 therefore represents a rate of return on total costs of only 4.8%. Z earns profit of 10 on total costs of 320, representing a rate of return on all costs of only 3.1%.

Now consider the application of the RPAI to determine routine profit in each business. Since this is a perfectly competitive market, economic theory would

predict residual profit to be zero. So routine profit in each business should be 10. The second column illustrates this, using a tax rate of 20%. Each business has routine profit of 10, and therefore pays tax of 2. With a fixed wage rate, we would expect this tax to be passed on in a higher price. So X would sell its intermediate good to Y for 112, and Y would sell its intermediate good to Z for 224. Finally, Z would sell the final good for 336. This price is higher by 6 than would be the case in the absence of tax, which reflects the tax of 20% on the total profit of 30. This is therefore the same outcome as for a unified business taxed on the whole profit of 30.

The third column illustrates the problem of cascading. This would occur if the routine profit of each business were calculated by applying a mark-up on total costs of 10%. This makes no difference to X, which only has labour costs. But total costs in Y are 212; applying 10% to this would result in a routine profit being measured as 21.2 and a tax of 4.24. If this tax were passed on in the price to Z, total costs in Z would be 326.24, imply routine profit of 32.62 and tax of 6.52. In this case, Z would need to charge a price of 342.76 for the final product. This is clearly higher than a unified business would charge.

Note that for businesses that earn a residual profit the effect of this cascading may be only to increase the proportion of profit labelled as routine, and correspondingly reduce the proportion labelled as residual. Whether or not a business has residual profit, however, this cascading can create economic inefficiencies and opportunities for tax planning.

Note that this problem of cascading does not arise in the existing regime. Consider Y, for example. Under the existing tax system, Y would be taxed on sales net of all costs. Based on column 2, with sales of 224 and total costs of 212, its profit before tax is 12. Charging tax of 2 reduces the profit to the required amount of 10. (Note that this implies a tax-inclusive rate of 16.67%, instead of 20%; this is because the tax rate is applied to the value of the sale, which includes the impact of the tax.)³³ The problem of cascading potentially arises because routine profit is determined by reference to costs incurred.

There are two ways to avoid the cascading problem within the RPAI framework. The first is to apply the rate of mark-up of 10% only to costs excluding any intermediate goods—labour, in our example. Since labour costs are 100 in each business, then applying a 10% mark-up yields routine profit of 10. The second is to apply the rate of return that yields the ‘true’ profit of 10. This is 4.8% for Y and 3.1% for Z.³⁴

³³ The tax inclusive rate is $t/(1+t)$ where t is the tax-exclusive rate of 20%.

³⁴ These rates are slightly lower in the presence of tax, since the costs of the intermediate goods is higher in the presence of tax.

Which of these approaches is more feasible depends on how the choice of mark-up is made. Under a fixed mark-up for all businesses, such as that proposed by Aviyonah et al (2009), it is not possible to distinguish businesses at different stages of the supply chain. A fixed mark-up should therefore in principle only be applied to costs that do not already reflect the tax on the routine profit of the seller—labour costs, in our example.

Instead the RPAI sets the mark-up by reference to financial data available for third party comparable businesses operating on an outsourcing basis. In principle, at least, such a comparison should reflect the relevant stage in the supply chain. For example, if the three businesses in our example were subsidiaries in a multinational, the comparison for Z should reflect the performance of an independent business at the third stage of this particular supply chain. Comparing it to a business at the second stage, say, would be likely to yield too high a rate of mark-up.

Two other conditions are also important. First, it is also crucial that the mark-up of the comparable business should be calculated with reference to the same set of costs as will be used in the multinational subsidiary. Second, this approach is always likely to be approximate, in that the balance of costs of intermediate goods and other costs may differ between even otherwise quite similar businesses. Suppose for example, that the comparator to Y had labour costs of 50 but paid 162 for intermediate goods (so that its total costs were also 212). But if the true profit is 10% of the labour costs, then the rate of mark-up in the comparator would be only 2.4%. Using this rate would underestimate the true profit in Y.

Making such comparisons is of course likely to be difficult in practice and this process is far from being a precise science. Nevertheless, this is broadly how the arm's length principle works. To the extent that it is feasible to do so, then the cascading problem could be minimized by carefully matching the cost bases of the business receiving the mark-up and the comparable business and selecting an appropriate mark-up. However, it should be acknowledged that this exercise is always likely to be somewhat rough and approximate, thus possibly allowing some degree of cascading.

The more precise approach is to leave the costs of intermediate goods out of the base for a cost mark-up, and to apply a mark-up which reflects the routine return as a proportion of other costs. We propose that this approach is taken where possible. Where it is not possible, because of deficiencies in the data of comparable businesses, it will be necessary to use the entire cost base and the best available measure of an appropriate mark-up.

Two other factors should be noted. First, purchases from other affiliates of the same multinational business are more open to tax planning. If X, Y, and Z were affiliates of the same group, for example, then if a routine mark-up on costs were

given at all stages of the supply chain then not only would residual profit be understated, there would also be a significant opportunity for the business to manipulate its supply chain to allocate different amounts of routine and residual profit in different countries. So there is a strong case for ignoring purchases from other affiliates where the price already reflects the routine profit of the selling affiliate. But second, treating within-business purchases differently from purchases from independent businesses may affect how the multinational chooses to organize its activities across countries.

Returning to our ongoing example, set out in Table 6.1, there are purchases of goods from B by A and C, which are then sold in the markets in those countries. It is common for distribution entities to be able to exclude the costs of these goods from a routine profit calculation; in our example, we assume that this applies to all within-multinational transactions, and so the purchasing entity does not include those costs in the case for calculating routine profit. Also, B purchases intermediate goods from third parties. We also assume that data exist to enable these costs to be ignored in the calculation of the routine profit in B. All other purchases are included in the base for the calculation of routine profit.

The cost-plus method is used to calculate routine profit in our example. Note that other transfer pricing approaches can also be used. However, whatever approach is used, its aim should be that of identifying only routine profit. This is important in ensuring that the RPAI complies more closely with the criteria for evaluating taxes set out in Chapter 2. For example, using a transfer pricing approach to identify only routine profit limits both the incentive and opportunity to shift profit to a low tax jurisdiction. It also diminishes the distortions to any real location choices of the multinational. We discuss these issues further below.

There are many problems with the current transfer pricing system. But whilst it is clearly often inadequate in dealing with certain transactions, such as payments for the use of intangibles, we believe it is relatively 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 profit because they tend to work relatively well in this context.³⁵

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

³⁵ 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 arm's 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.

R&D³⁶ or marketing services³⁷) or manufacturing,³⁸ data from independent public companies in such businesses are typically available in the US that illustrate the cost structure and range of profitability that can be expected for such activities. In the European Union, even closely held companies are obliged to disclose their annual accounts and profit statements to the general public.³⁹

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 utilized to estimate 'routine' returns to multinational functions and activities. As a general matter, for service activities, an appropriate allocation can be based on the ratios of operating profit to total operating costs of the comparable companies.⁴⁰ 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 this profit as 'routine', it can in fact be quite significant and is not only related to 'routine' functions in the sense of standardized 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 multinational.

As noted above, unlike the OECD approach, the RPAI does not draw a line between subsidiaries that receive a routine profit and those that receive a residual profit. Rather, all functions and activities performed within the group by affiliated entities are attributed a 'routine profit' based on comparable functions and activities 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

³⁶ Independent research organizations (including e.g. 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.

³⁷ Independent marketing companies (including e.g. 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.

³⁸ 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.

³⁹ Article 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 is critical to this wide-reaching approach to disclosure; see Schön (2006).

⁴⁰ Or, stated another way, the ratio of operating profit to revenues, since revenues minus operating costs equal operating profit.

the proposal would be to limit future transfer pricing disputes to these types of matters.

If over time these transfer pricing disputes proved in fact to be troublesome or costly, the determination of routine profit could be made more formulaic, for example, by implementing ‘safe harbours’ or even mandatory mark-ups on specified costs⁴¹ or rates of return on investment to determine routine returns without reference to specific comparables. This would bring the RPAI 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.⁴² 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’.⁴³

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 further merit in not doing so.

Returning to our example, Table 6.3 shows routine profit for the business described in Table 6.1. Recall that in our example routine profit is set through the cost-plus method. As noted above, we assume in our example that the cost of the intermediate goods purchased by the manufacturing affiliate in B can be excluded from the base for calculating routine profit. Those costs do not therefore qualify for a further routine profit in B. Similarly, the purchases of A and C from B can also be excluded. However, all other costs are used in the base for the routine profit, based on a cost-plus mark-up.

We assume that there are two different rates of mark-up. Manufacturing—reflected in the cost of goods sold—and R&D 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 affiliate in B therefore applies a mark-up of 10% to its costs of goods sold 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 functions and activities giving rise to non-allocable costs, including R&D which also has a mark-up of 10%. The affiliate in C has low routine profit of only 9, since

⁴¹ For example, mandatory mark-ups could be imposed only on labour costs thus avoiding the double counting problem altogether.

⁴² See Schoueri (2015), p. 705 *et seq.*

⁴³ OECD (2017a), Chapter E, para. 4.112.

Table 6.3 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	

it only undertakes functions and activities that give rise to local sales and marketing costs.

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, the price of which already reflects the routine profit in B. 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.

3.3 Residual profit

Residual profit is profit earned by the business in excess of routine profit. As outlined in Section 1 there are broadly two ways in which the residual profit can be calculated under the RPAI: a bottom-up and a top-down approach. The two are equivalent. We begin with the bottom-up approach.⁴⁴

3.3.1 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 separately on a product-by-product or product line

⁴⁴ For those who prefer algebra to examples, Appendix 2 formalizes the discussion that follows, and provides a proof of the general equivalence between these two approaches.

basis.⁴⁵ The affiliate in the market country⁴⁶ 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 the affiliate that is selling to the affiliate in the market country. The market country affiliate also deducts a routine profit associated with its own direct costs, such as its sale and marketing activities.⁴⁷ Deducting allocable costs and any related routine profit 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 multinational's total non-allocable costs and related routine profit. The share is equal to its share of the worldwide RGI of the multinational.

The hybrid nature of the RPAI 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, a multinational'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 RPAI thus departs from existing PE threshold and attribution rules. We discuss this further below. For ease of illustration, the multinational 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 multinational as a whole, or separately for specific products or product lines. Many multinationals 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

⁴⁵ 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.

⁴⁶ We discuss implementation issues below for the case in which there is no affiliate in a market country.

⁴⁷ Dividing the profit in the market country into its routine and residual components is important in determining RGI in that country, and hence the allocation of non-allocable costs to that country and to other market countries. It may also matter if the market country chooses to tax the routine and residual components at different rates.

⁴⁸ If in our example goods were sold from country B 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.

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 ongoing example set out above, in which a multinational 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.

3.3.1.1 *Residual gross income (RGI)*

The starting point in any determination of residual profit with respect to the sale of products is actual third party revenues arising in a particular market. These are set out in Table 6.1.

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 marketing costs.

- 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.

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 is deemed to have 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, recall, the per unit total 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 is assumed to be 10%, which determines a deemed 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 6.4 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 transacted between affiliates	-96	176	-80	0
Allocable costs of intermediate goods	96	24	80	200
Other allocable costs	144	36	160	340
Associated routine profit	14.4	3.6	16	34
Total allocable costs incurred	254.4	63.6	256	574
Value of transfer	-254.4	510.4	-256	0

Table 6.4 sets out the value of transfers from B to A and from B to C for the goods produced in B. For example, the total value of the transfer of ninety-six units to A consists of the costs of intermediate goods purchased by B (of 96), plus additional allocable costs incurred by B of 144⁴⁹ and the routine profit associated with those other costs of 14.4. The transfer value is therefore 254.4, equal to ninety-six units at a price of 2.65 per unit. Table 6.4 shows the similar calculation for sales to the affiliate in C, and also the allocable costs which remain in the affiliate in B.

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 6.4, which yields a total allocable cost of 63.6. Alternatively, it can be calculated as the total manufacturing costs incurred by B 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 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. With local sales and marketing costs of 200, 40, and 180 incurred in countries A, B, and C respectively, this yields routine profit from these activities of 10, 2, and 9 respectively, as shown in Table 6.3. The sum of these costs plus the associated routine profit—which are 210, 42, and 189 in

⁴⁹ Calculated as $144=1.5 \times 96$.

Table 6.5 Calculating residual gross income (RGI)

	Affiliate in:			TOTAL
	A	B	C	
Third party revenues	960	240	1,200	2,400
<i>Less allocable costs:</i>				
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
<i>Proportion of RGI in each affiliate</i>	<i>35.8%</i>	<i>9.7%</i>	<i>54.5%</i>	<i>100%</i>

countries A, B, and C respectively—are also deducted from third party revenues in calculating RGI.⁵⁰

We are now in a position to calculate the RGI in each country and affiliate, by subtracting from sales revenue those costs allocable to those sales (inclusive of their routine returns where this is applicable). Table 6.5 combines these elements to derive the RGIs in each country.

In our example, total RGI is 1,385. There is a significant contrast to the allocation of routine profit (shown in Table 6.3). Whereas the affiliate in C accounts for only 9% of the multinational's aggregate routine profit, its RGI of 755 accounts for 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 there. The affiliate in A has RGI of 495.6 (35.8% of the total), reflecting the large number 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.

3.3.1.2 *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 an apportionment formula. This approach can be applied to each of the material categories of non-allocable costs: 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

⁵⁰ Note that tax paid on routine profit is *not* deducted in determining RGI. That is because the taxes on routine and residual profit apply to different bases, so there is no need for deduction or crediting.

in the market jurisdictions that sell products to third parties. Under the RPAI the apportionment factor is RGI, but as discussed below other factors could be used, including sales.

General and administrative (G&A) costs by definition do not relate to specific products or product lines. For non-tax purposes multinationals 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 costs to charge them out to other affiliates only in circumstances where the purchasing affiliate directly benefits from the G&A cost. Thus, multinationals may end up deducting a substantial portion of these costs only in the country where the original cost is incurred. However, given that these costs benefit broad categories of income generated by multinationals in different jurisdictions, it would seem more appropriate that they be allocated to those jurisdictions.⁵¹ As with other costs, any routine profit associated with these costs must also be apportioned to market affiliates and deducted in the determination of residual profit; without such deduction, that element of profit would be included both under routine and residual profit.

Like G&A costs, research and development (R&D) costs cannot typically be identified with particular products or product lines because much of the costs relate to potential new products (including products that ultimately fail) and not just new versions of existing products. Consequently, it may be appropriate that R&D costs, together with the related routine profit, should be apportioned among market affiliates according to products and product lines. For multinationals 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 costs separately for different lines of business. But in other cases, synergies between different businesses may dictate that R&D costs 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 cost 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 costs to be charged to an affiliate, it is important that all costs, including for example, employee incentive compensation (e.g. stock

⁵¹ 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 costs and a mark-up on those costs 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.

Table 6.6 Apportionment of non-allocable costs with mark-up, by RGI

	Affiliate in:			TOTAL
	A	B	C	
Total non-allocable costs, including routine profit				645
<i>Proportion of RGI in each affiliate</i> ¹	35.8%	9.7%	54.5%	100%
Apportionment to each affiliate	230.8	62.6	351.6	645

Note: 1. From Table 6.5

options), be taken into account in some manner.⁵² It may be that the routine profit on R&D activities is higher than that for, for example, 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 6.6 illustrates the apportionment of non-allocable expenses in our ongoing example. We start with the total non-allocable costs taken from Table 6.1, 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 6.3). This total is then apportioned in proportion of RGI in each country, as derived in Table 6.5. Since the affiliate in C has the highest share of RGI, it is allocated the highest share of non-allocable costs.

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. An alternative approach to that in Table 6.6, and one 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 (in line with the RGI shares in Table 6.6) 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 6.5, and simply deduct the apportionment of non-allocable costs and related routine profit from Table 6.6. As in the case of allocable costs, the tax paid on the routine profit allocated for functions

⁵² This could be an area of some difficulty to the extent that the tax treatment of stock-based compensation differs among countries. But the presumption should be that the costs of stock-based compensation should be charged out like other employee compensation.

Table 6.7 Residual profit

	Affiliate in:			TOTAL
	A	B	C	
RGI	495.6	134.4	755	1,385
Less apportionment of non-allocable costs	-230.8	-62.6	-351.6	-645
Residual Profit	264.8	71.8	403.4	740
<i>Proportion of RGI and residual profit in each affiliate</i>	35.8%	9.7%	54.5%	100.0%

Table 6.8 Residual profit using the 'top-down' approach

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

and activities relating to non-allocable costs is *not* deducted from sales revenues when calculating residual profit in market countries.

The result is shown in Table 6.7. 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.

3.3.2 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 multinational is first calculated, and then apportioned between the relevant market affiliates.

Under the RPAI, the apportionment is based on the RGI. This means that the first step in the 'bottom-up' approach—calculating RGI in each market country—is also necessary in the 'top-down' approach.

In our example, residual profit is 740. This can be calculated simply by deducting total routine profit of 100 (Table 6.3) from total profit of 840 (Table 6.1). Table 6.8 applies the proportion of RGI in each affiliate to total residual profit. The resulting apportionment is identical to that in Table 6.7, following the 'bottom-up' approach.

Table 6.9 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

3.4 Further issues

Although we have set out the basic mechanics of how the RPAI would operate, a number of further design issues arise. We discuss these issues here. Further implementation issues are discussed in Section 5.

A first question concerns the rates at which residual and routine profit will be taxed. It is of course straightforward to aggregate routine and residual profit (as shown for our example in Table 6.9). It may indeed be that a country chooses to apply the same tax rate to both elements of profit, in which case it would make 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 profit. However, it is possible that countries may choose to apply different rates to routine and residual profit. It might be, for instance, that functions and activities generating routine profit are readily relocated in relation to tax considerations, whereas the allocation of residual profit largely on a destination basis provides a less mobile tax base that can support a higher rate. The separation of routine and residual profit 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 harmonized definition of the tax base is required for use in all countries participating in the RPAI. 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 US, which also operate a formulary apportionment approach, although many states refer to the federal tax base. The transfer pricing interpretation of the RPAI suggests that perfect harmonization 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 5.

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; the allocation of interest expense; and the treatment of losses.

3.4.1 Routine and residual profit in the case of remote sales

Where a multinational 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 multinational 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.⁵³ The RPAI by contrast would seek to assign residual profit to the market country, subject to a *de minimis* rule. If, under the RPAI, 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 multinationals, 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 RPAI also to remote sales across countries. This is a significant departure from current practice,⁵⁴ albeit along the lines of proposals being discussed at the time of writing. For example, suppose that a German business sells remotely only to French consumers, without any taxable presence in France. Currently, the profit on the transaction would be taxed only in Germany. However, the RPAI 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 profit amongst subsidiaries of the multinational. In effect the RPAI requires the use of deemed transfer prices to calculate the residual profit in a market country whether the 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

⁵³ As discussed in Chapter 3, at the time of writing proposals are being discussed at the OECD/G20 Inclusive Framework that would allocate some taxing rights to the market country.

⁵⁴ As discussed below, this departure from current practice would require changes 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.

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 RPAI clearly adds some complexity relative to the existing system.⁵⁵ We discuss some more practical issues relating to this in Section 5. However, it is worth repeating that references in this chapter to transfers amongst affiliates of a multinational should be taken also to include deemed transfers in cases where there is no subsidiary or any physical presence whatsoever in market countries.

3.4.2 Interest expense

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

In today's world interest expense is one of the principal tools of tax planners.⁵⁶ Because multinational 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. Reflecting this reality, limiting interest deductions was considered in detail by the OECD in the BEPS project.⁵⁷ One option considered by the OECD was to limit the deductions of third party and inter-company interest expense based on a ratio derived from the multinational group's aggregate third party interest cost divided by a measure of income or assets.⁵⁸

In a system that imputes routine returns to 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 inter-company interest incurred by an

⁵⁵ Although, note again that similar issues arise under the DBCFT, recently implemented digital services taxes and the Pillar I proposal being discussed at the time of writing by the Inclusive Framework.

⁵⁶ See the discussion in Chapter 3.

⁵⁷ OECD (2015b).

⁵⁸ OECD (2015b).

affiliate that can be deducted by that affiliate but supplemented this with ‘a group ratio rule’ that permits higher net interest deductions, based on the financial ratio of its worldwide group. However, the RPAI 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 multinational addresses the debt-shifting problem in a way that is congruent with the general design of the RPAI. 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.⁵⁹

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.⁶⁰ 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 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 on 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 RPAI.⁶¹

3.4.3 Taxable losses

Of course, not all multinationals generate positive residual profit in all destination countries. Three types of loss need to be considered—losses arising when:

- Total residual profit of the multinational is positive, but RGI, and therefore allocated profit, is negative in at least one jurisdiction, and positive in other jurisdictions;

⁵⁹ 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.

⁶⁰ This was proposed by Graetz (2008), although that paper also noted the possibility of basing the allocation on income; in a similar vein, see Hey (2014). Desai and 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.

⁶¹ Since routine profit is 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 profit would not require any adjustment to their transfer prices with other affiliates.

- Total worldwide profit is positive, but less than the sum of routine profit, so that total residual profit is negative; and
- Total worldwide profit is negative.

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

We begin with the first, where the multinational 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 residual profit is 10.

Following the procedures set out above, the weight for apportioning non-allocable costs to country X is -1 (i.e. $-50/+50$) and the weight for country Y is $+2$ (i.e. $100/50$). RGI in X would therefore be *increased* by 40, to reach a residual profit in X of -10 . RGI in Y would be *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 countries. 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 Y. Specifically, in this example then, the weighted average effective rate of deduction for non-allocable costs is 60%.

This creates potential problems. First, the taxable residual loss in X becomes, perversely, smaller the higher are non-allocable costs. This is at the expense of the residual profit allocated to 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, and X would have a 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 is 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. In considering this, a starting point is to ask what principle should be applied as to where losses should be identified for tax purposes.

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 profit would be allocable if such profit 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 profit for the relevant products. But—if losses are not immediately rebated in the market country—such a rule could lead to multinationals being taxed on amounts that exceed global profit, 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 approximates 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 may have 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

Table 6.10 A potential allocation of the tax base with low profit and with a loss

	Positive profit	Negative profit
Revenues	1,600	1,400
Costs	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

market country should have a zero tax base. In this case routine profit subject to tax would not exceed the total profit 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 6.10. In the first column, the multinational earns revenue of 1,600; in the second it earns revenue of 1,400. In both cases, it has total costs 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, 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?

Second, the mechanism for reducing the routine profit in any country is not clear. Under the basic RPAI, origin countries would not need to have information on the profit of the multinational 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 which had costs 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 and RGI in loss years may be significantly different than their location in excess profit years. That problem could potentially be dealt with by providing a priority allocation of residual profit 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 of 50 in column 1 of Table 6.10, and 150 in column 2. When the total profit of the business is sufficiently high, the origin countries would not tax routine profit 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.

3.5 Comparing the RPAI with other approaches

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

Options within the RPA family of regimes 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 regime is applied on a product-line or a business-wide basis. Section 3.5.1 discusses other options for allocating residual profit, both the jurisdiction to which it is allocated, and the formula used for that allocation. Section 3.5.2 specifically comments on other proposed RPA regimes, in particular, those proposed by Avi-Yonah, Clausing, and Durst (2009), and by Luckhaupt, Overesch, and Schreiber (2012). It also discusses sales-based formulary apportionment, which is a further step from the RPAI, 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 (2017) for what is effectively a minimum tax in the destination country, which also has similar properties.

3.5.1 Alternative allocations of residual profit

The RPAI allocates residual profit according to the share of the multinational’s aggregate RGI attributed to each market jurisdiction. But one can conceive of many

Table 6.11 Allocation of residual profit by different factors

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

other ways in which residual profit could be allocated.⁶² 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 profit.

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 6.11 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.

3.5.1.1 Allocation of residual profit by sales revenue

One obvious alternative is to allocate residual profit 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, while both the allocable cost per unit and the selling price per unit are higher in C than in A and B, the proportionate difference in 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—in the sense of a higher ratio of sales to allocable

⁶² Altshuler and Grubert (2010) consider the case where 50% of residual profit is allocated to the parent. In their simulation model this substantially reduces distortions relative to a standard formulary apportionment approach.

Table 6.12 Bottom-up approach: allocation of residual profit by sales

	Affiliate in:			TOTAL
	A	B	C	
RGI	495.6	134.4	755	1,385
<i>Proportion of sales in each affiliate</i>	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%

costs—thus benefit from an allocation by RGI compared to allocation by sales revenue.⁶³

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. 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 that country's tax revenues should reflect those 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 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. More precisely, a bottom-up approach that shares non-allocable costs across countries in proportion to sales does not give the same final allocation of residual profit as a top-down approach that simply allocates the residual in proportion to sales. For our example, this can be seen by comparing the results of such a bottom-up sales-based approach, shown in Table 6.12, with the result of an allocation of residual profit by sales using a top-down approach in Table 6.11.

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 costs are allocated by sales,

⁶³ 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 ratio of price to cost in Y is greater than that in Z.

while under the top-down approach *all* costs are allocated by sales. The bottom-up approach thus cannot be used to allocate residual profit in proportion to sales.⁶⁴

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 may well 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.

Suppose that a business is operating in country A and faces the RPAI 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, which also operates the RPAI, at a rate of 30%. 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. Suppose that the business is willing to go ahead with this project if it earns an after-tax profit of at least 7% (equivalent to the rate of routine mark-up less tax). The project yields a pre-tax profit of 200. Routine profit in B is 200, on which tax is due of 60. Residual profit, and RGI, are both zero. If residual profit is allocated by RGI, there would therefore be no impact on the tax position in A. After tax, the business would make a profit of 140 in B, a rate of return of 7%. The project would therefore go ahead under the RPAI in both countries.

Now suppose that residual profit is allocated on the basis of sales on a top-down basis. 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% on the costs of 2,000 incurred in B—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 profit earned from sales in one country (in the example, country A) into another (in this case country B). In the example, part

⁶⁴ Non-allocable costs could be allocated by sales rather than RGI under the bottom-up approach as done in Table 6.13, 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.

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.

The first strategy starts with 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 at a 20% rate in A (leaving to one side the zero tax on routine profit in B).⁶⁵ Clearly in this case there would be an incentive to undertake the investment in B even if it were loss making.⁶⁶

The second strategy is straightforward. 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 jurisdiction. Consider an example where company A manufactures goods at a cost of 100 in country X and sells them to consumers in country Y for 220. Assuming a routine profit of 10% in X, this leaves a residual profit of 110 in Y. Assume now that Y is a high tax country, and company A would like to shift profit to Z, a low tax jurisdiction. Under an allocation by sales, the company could shift profit away from Y to low tax jurisdiction Z by purchasing company B, which manufactures goods at a cost of 200 and sells them for 220 to consumers in Z. Under a sales-based allocation, 50% of the residual profit initially in Y would be relocated to Z.⁶⁷

However, this strategy would not work under allocation by RGI. In this case, there would be no change to the routine or residual profit in X (since there are no non-allocable costs), and company A would continue to have routine profit of 110 in Y, but no residual profit in Z. An RPA using allocation by sales would be somewhat more robust to this strategy if it was adopted on a product line basis as this

⁶⁵ Tax on residual profit in B would be zero, on residual profit in A would be 63, and tax on routine profit in A would be 20.

⁶⁶ This example could clearly be made more extreme by allowing the business 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 RGI in B is zero in order to avoid any complications arising from losses.

⁶⁷ It is 50% because sales in Y and Z are equal, at 220 in each country.

would require company B to manufacture and sell goods in the same product line as company A for the strategy to succeed. However, alternative strategies which exploit the same weakness could be used; for example, company A could switch from selling goods to consumers in Y at a high mark-up to selling to consumers in Z at a low mark-up.

Both these examples lie in the grey area between tax planning and real economic responses.⁶⁸ 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 costs, routine and residual profit in country A are 10 and 40 respectively and its total tax liability is 15.

As a second step consider the case where the manufacturing business sells its goods for 149 to an independent distributor in a low tax jurisdiction, L.⁶⁹ The distributor then sells the goods to the same consumer in A for 150. Assume that the tax rate in L is zero and that the distributor has no costs 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 L 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 L;⁷⁰ but if it is allocated by sales it is split roughly equally between L and in A.⁷¹ 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.

⁶⁸ Examples under the existing system include inversions out of the US and moving people functions for profit attribution and transfer pricing purposes.

⁶⁹ The difficulties that can arise as a result of the use of third party distributors are discussed further in Section 4.1.2.1.

⁷⁰ A's RGI is 39 (149–110) in L and 0 in A (150–150).

⁷¹ A has sales of 149 in L and 150 in A. The proportion of total sales in each country is thus approximately 50%.

3.5.1.2 Allocation of residual profit by costs

Allocating residual profit 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 transactional profit split—on the basis of the functions and activities taking place in different countries.⁷² One somewhat crude way of doing this would be to allocate residual profit (or a portion of the residual profit) instead to where third party costs are incurred (an alternative would be to base the allocation on routine profit). The final panel of Table 6.11 shows the outcome under an allocation based on costs. Clearly this change in allocation factors creates a very significant switch in the allocation of profit away 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 by cost may have some appeal in allocating the tax base on something approaching an origin basis, as discussed in Chapter 4, 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 RPAI on these two fronts, relative to the existing system, stems from the allocation of the residual profit to the market country.

3.5.1.3 Allocation of residual profit by users of digital services

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 digitalized businesses are located (HM Treasury, 2018).⁷³ 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 profit 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 RPAI, and therefore residual profit is

⁷² For the allocation of the residual profit on the basis of a contribution analysis see: OECD (2018d), para. 2.150 *et seq.*; Schön (2010), p. 235 *et seq.*; Couzin (2013), p. 175 *et seq.*

⁷³ For a critical evaluation of this proposal see Devereux and Vella (2018a).

allocated by RGI (the 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 UK.⁷⁴

3.5.1.4 *Allow countries to negotiate the allocation of the residual profit*

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 could conceivably 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 a corresponding share of 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 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 taxpayers. 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 bases. This issue is also raised by the proposal put forward by Schreiber and Fell (2017) set out below.

3.5.2 Other RPA proposals

3.5.2.1 *Avi-Yonah et al and Luckhaupt et al*

As noted above, proposals similar to the RPAI have been made by Avi-Yonah et al (2009) and Luckhaupt et al (2012). They proposed splitting total profit into a routine component and a residual component. However, their proposals differ from the RPAI 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

⁷⁴ 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. In this case, 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.

Table 6.13 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

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 is that it is not able to distinguish cases where there might be legitimate differences in the appropriate rate of mark-up.⁷⁵ It also gives rise to the double counting issue discussed above.

Moreover, the separate accounting approach used by the RPAI presented here can apply 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. The proposal by Luckhaupt et al is closer to the RPAI 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. 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.

Simply to illustrate its mechanics, we apply the approach proposed by Avi-Yonah et al to our example in Table 6.13. 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 (on a top-down approach).

⁷⁵ 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 could also act as a disincentive to locate functions and activities in those countries.

3.5.2.2 *Formulary apportionment*

Formulary apportionment systems have been discussed in Chapter 4. A standard form of formulary apportionment which has been employed by most US states in the past⁷⁶ and which is also championed by the European Commission⁷⁷ would allocate profit to jurisdictions based on the location of three factors: labour, capital, and sales.

In recent years, more and more US 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.⁷⁸ 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.⁷⁹ Taking a closer look, this model—sales-based formulary apportionment—bears some relationship to the RPAI but there are fundamental differences.

First, and most fundamentally, traditional formulary apportionment allocates *all* of the unitary profit of a multinational group by means of weighting factors; RPA schemes, on the other hand, allocate only residual profit in this way, with routine profit allocated to the jurisdiction in which functions and activities take place. Under sales-based formulary apportionment a multinational's total profit is allocated by sales; there is no allocation of routine profit 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 formulary apportionment allocates the overall profit of the whole business. The RPAI on the other hand, as we have noted, could be 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 multinational. Of course, a pure formulary apportionment approach could also be undertaken on this basis.

Fourth, formulary apportionment does not permit the bottom-up approach described above that aligns RPAI closely with familiar transfer pricing ideas.

⁷⁶ See Hellerstein (2013).

⁷⁷ Article 28 of the Draft CCCTB Directive.

⁷⁸ See Mazerov (2001).

⁷⁹ For an analysis of different proposals see Morse (2010); Roin (2008).

Table 6.14 Formulary apportionment based on sales

	Affiliate in:			TOTAL
	A	B	C	
Total profit allocated by sales	336	84	420	840

Table 6.14 illustrates how a pure formulary apportionment system using only the location of sales would apply in our base case example.⁸⁰ The total global profit of 840 would be calculated and simply allocated to each affiliate and country according to where sales are made.

Note that in our example, residual profit is much larger than routine profit. And since the RPAI 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 sales-based formula apportionment approach since it is primarily the country where manufacturing takes place, rather than where sales are made.⁸¹

3.5.2.3 *Minimum tax in destination country*

There are also some similarities between the RPAI and a recent proposal of Schreiber and Fell (2017).⁸²

All of the aforementioned proposals—those in the RPA family of proposals as well as fully-fledged formulary apportionment—divide the total profit of an international business among the involved jurisdictions in an exclusive manner. That is, no element of a multinational'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 multinational 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.⁸³

⁸⁰ Under the RPAI, the allocation of total profit is amongst origin and destination countries, like the traditional three-factor formula. However, the allocation under the RPAI is based on a very different calculation; there is no particular reason to expect the RPAI to generate an outcome similar to the three-factor formulary apportionment method.

⁸¹ Aggregating through the economy, the difference in outcomes from basing the allocation on origin and destination depends primarily on the balance of trade.

⁸² See also Fell (2017) and Schreiber (2018).

⁸³ While the mechanism for calculating origin 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.

Second, each market country would tax a certain share of the overall profit of the multinational (calculated either on a transactional basis following product lines as proposed here or calculated on the basis of a group-wide profit split).⁸⁴ Third, the market country would give a tax credit for the conventional origin taxes paid elsewhere.⁸⁵

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 multinational from shifting profit from the origin country to low tax jurisdictions. As a result, it mitigates what under an RPA might be an incentive to set low tax rates of routine profit 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 in effect raise revenue only to the extent that origin countries were unable (or chose not) 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.⁸⁶

3.5.2.4 OECD Secretariat's proposed 'Unified Approach' of October 2019

Chapter 3 has already briefly described what is, at the time of writing, ongoing work in the OECD for a form of RPA.

The basic approach proposed under Pillar I—the 'Unified Approach'—is to identify the residual profit of a multinational business using its worldwide consolidated financial accounts. It would apply a fixed percentage mark-up to determine its routine profit, and any additional profit above this would be considered to be the residual profit. The OECD proposes to allocate part of that residual profit to countries in which the multinational business has sales to independent parties—the allocation would be based on the value of sales in each country. But note that this may be a relatively small part of the measured residual profit. Unlike the RPAI, it is not intended to allocate all residual profit to market countries. The OECD's rationale appears to be that the market country is, in a sense,

⁸⁴ The two different approaches are laid out by Schreiber (2018), p. 265 *et seq.*

⁸⁵ 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.

⁸⁶ This is acknowledged in Schreiber (2018), p. 268 *et seq.*

deemed to be an origin country—even if the business has no physical presence there, it may have intangible assets associated with marketing and sales which could be deemed to be located in the market country. But those intangible assets are not deemed to be important enough to allocate the entire residual profit to the market country.

This allocation of part of the residual profit would be in addition to the normal operation of the existing system. That raises the question of how the proposal would avoid double taxation. It must be the case that part of the measured residual income allocated to market countries would be deducted from taxable profit in other countries. Currently, the proposal is unclear on exactly how that would be achieved.

4. Evaluating the RPAI

We now turn to an evaluation of the RPAI. We do so under two settings. In the first setting, which we discuss in more detail, we consider the case in which the RPAI 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 RPAI is adopted unilaterally by one country, or a subset of countries. The latter is important for identifying whether individual countries would find it in their own interest to adopt the RPAI 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 RPAI 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 RPAI 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, cross-border revenue sharing seems unlikely, and so we consider the RPAI in the absence of any such re-allocation.

4.1 Universal adoption

4.1.1 Economic efficiency

4.1.1.1 *The tax base*

As described above, the RPAI 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) discussed 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 keep it as close as possible to the existing systems. But it is not a fundamental feature. The key features of the RPAI concern the international allocation of profit among countries. It would be perfectly possible to use other tax bases—including one based on economic rent, or using a different treatment of interest⁸⁷—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 harmonized across countries which implemented a common RPAI system. We discuss that issue in Section 5.3.

By design, then, the RPAI fails to remove two forms of inefficiency that have been described in Chapters 2 and 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 tend to 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.⁸⁸ We should here distinguish the general bias in the tax system in favour of debt finance, and the use of debt to shift profit

⁸⁷ For example, the RPAI 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 set out in Chapter 2. Here we focus on the international aspect of the RPAI.

⁸⁸ See the discussion in Chapter 2.

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, the RPAI 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 RPAI. It would be perfectly possible to modify the tax base of the RPAI to avoid these distortions.

4.1.1.2 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 regime has a very significant impact on location decisions.⁸⁹ 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 RPAI is to limit the impact of taxation on the location choices of multinational businesses.

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 RPAI system is the tax on routine profit. Such location choices would not generally be 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 profit. As a result, the incentive structure for locating real activities in tax-favoured jurisdictions will be changed, 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 and activities to tax-favoured jurisdictions and to maintaining them there as well. Those costs might be justified where substantial residual profit follows to that jurisdiction. But the comparison of costs and benefits is very different when only routine profit follows.

A simple example can illustrate this point. For service activities, a routine profit will often be in the range of 5% to 10% of revenues, implying an operating margin on costs from 6% to 12%.⁹⁰ 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.

It should be acknowledged that identifying a routine profit is not an exact science; so that there may be opportunities for the taxpayer to exaggerate the routine

⁸⁹ Again, see the discussion in Chapters 2 and 3.

⁹⁰ 100 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.

return if the relevant tax rate in the country of the routine profit 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 RPAI 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. There would be no tax benefit in shifting IP rights to low tax countries as these countries will not have taxing rights any more (unless they can show that functions and activities 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 modified nexus approach introduced by BEPS and described in Chapter 3. These can give a sizeable incentive to locate R&D in a country with a special regime. It seems reasonable to argue that such regimes should lie outside the RPAI system. That is, any explicit benefit provided by a government for R&D (or any other activity that the government wishes to support) should be independent of the working of the RPAI, 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 regime, 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 RPAI.

4.1.1.3 *Intermediate businesses*

One other location decision may be affected by the RPAI—the location of a business buying intermediate goods.⁹¹ 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.

⁹¹ See Andrus and Oosterhuis (2017), p. 99.

Suppose an independent business—company 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 company X will have at least part of their residual profit in the country in which 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 RPAI 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.

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.⁹² This may result in an economic inefficiency due to a distortion to the location of 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 an international level, since taxes on profit are not generally levied in the market country. 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.⁹³

Note also that this issue does not arise under the DBCFT, as explained in Chapter 7. Briefly this is because of the border adjustment in the DBCFT; imports are taxed in any country—interposing an intermediate country does not therefore affect the tax on imports in the final country in which a sale is made.

4.1.2 Robustness to avoidance

4.1.2.1 *Avoidance opportunities addressed by RPAI*

When adopted in all countries, the RPAI addresses three important channels used by multinationals to shift profit to low tax jurisdictions: lending from a low tax

⁹² 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.

⁹³ 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 in a tax-favoured jurisdiction. These problems would remain in identifying the location of routine and any residual profit.

country to a high tax country, locating intangible assets that earn a royalty or licence payment in a low tax jurisdiction, and manipulating transfer prices. Let us examine each of these in turn.

Debt shifting First, the RPAI would not give relief for the cost of interest payments on within-company debt. So a multinational that lends from an affiliate in a low tax jurisdiction to an affiliate (or parent) in a high tax country would simply not receive relief in the high tax country. Further, under the existing system, business is much more likely to borrow from third parties in high tax countries, since that raises the value of tax relief. Under the RPAI, however, third party interest costs would be allocated—as discussed in Section 3.4.2—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 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 largely eliminated.

Locating IP in low tax countries Second, under the RPAI 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 multinational; 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.

Transfer pricing Third, the key element of the existing transfer pricing regime that would be incorporated into the RPAI 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.⁹⁴ 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 would 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 charged to a third party. In this respect, the RPAI diverges from the pure arm's length principle. But it is this divergence that means that

⁹⁴ 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 the market country—see Section 3.3.1.

the RPAI is much less susceptible to profit shifting through the manipulation of transfer prices.

4.1.2.2 Remaining or new avoidance opportunities under the RPAI

In sum, the RPAI would create significant advantages over the current system in terms of its robustness to avoidance. Many of the issues addressed in the OECD/G20 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 RPAI is the determination of the location of the sales to a third party customer. That is the location of the ‘market’ for determining where the residual profit would be taxed. Suppose now that a business, B, aimed to sell to customers resident in country H, a high tax country. Instead of selling directly to customers in H, the business might instead sell to an independent third party distributor, D, located in a low tax jurisdiction L. The distributor, D, would in turn sell the product on to the final customers 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 jurisdiction.

This is essentially the same as the inefficiency problem just noted above, in that businesses may choose to locate their purchases in low tax countries if that would 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 profit 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 that 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.⁹⁵

Even if this was successful in practice, however, 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 RPAI 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 they were part of the same multinational group. In that case, D would be taxed on its routine profit in the low tax jurisdiction, 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.⁹⁶

Product versus product line composition Another area in which businesses may be able to make choices that affect their tax liabilities under the RPAI is in the aggregating or disaggregating of products and product lines. Whether to determine routine and residual profit separately for each product or together for multiple products—perhaps all of a multinational’s products—could materially alter the amount of tax allocable to any particular country. Giving taxpayers discretion over such grouping could therefore be problematic.

For example, suppose that one product is highly profitable and is sold 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.⁹⁷ 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 to be kept separate from each other. On the other hand, if both products are sold by

⁹⁵ This may also put H in conflict with L.

⁹⁶ Note that this problem may also arise in the context of the OECD Pillar I proposals.

⁹⁷ As discussed in Section 3.5.1.1, this is a more serious issue when sales are used to apportion residual profit.

the same multinational, then there could be some benefit in reducing complexity and tax planning opportunities by combining the product lines.

While some tax planning is probably inevitable, the scope for such tax planning may be relatively limited in practice. The base for determining routine and residual profit should be the underlying management financial statements that a multinational uses for non-tax purposes and which have been audited by independent external experts. The design and maintenance of these accounting systems involve business judgements by multinationals 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 RPAI. 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.

4.1.2.3 Conclusions

Relative to the current system, several aspects of the RPAI should significantly reduce the number and magnitude of controversies over transfer pricing or 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 RPAI would also introduce new scope for disputes 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. It would also be likely to introduce greater multilateral disputes since the routine profit in one country could affect RGI, and hence the allocation of non-allocable costs, in a number of other countries.

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 RPAI system more mechanical. For example, it would be possible to move further towards the route taken in the proposal by Avi-Yonah et al (2009), 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. Any further refinements that are necessary to reduce the level of disputes could be introduced after its implementation.

4.1.3 Ease of administration

We examine detailed issues of implementation in Section 5. Here we simply outline the main features that differentiate the RPAI.

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

It is the case that the RPAI involves allocating profit between jurisdictions for remote sales when this is not currently required. This will certainly add to the administrative burden relative to the existing regime. However, the burden of collecting tax on routine profit 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 profit presents tougher administrative challenges. Recall that for a country to measure residual profit 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 multinational 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 multinational, for the apportionment of non-allocable costs; and
- (iii) on total non-allocable costs, and the associated routine profit, of the multinational.⁹⁸

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 with the introduction of country-by-country reporting, as set out in the OECD/G20 BEPS Action 13 report.⁹⁹

⁹⁸ Less information is required under a top-down approach: worldwide residual profit, worldwide RGI, and domestic RGI.

⁹⁹ See Schreiber (2018), p. 268 *et seq.*

4.1.4 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 4 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 the RPAI, 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 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.¹⁰⁰ It is therefore extremely difficult to say whether a tax on business profit is likely to be progressive.

In evaluating a switch from a conventional tax to the RPAI, 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, 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 RPAI is therefore likely to have a different incidence than a conventional origin-based tax; but this reflects 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 countries, the RPAI allocates taxing rights over residual profit to market countries, which—in the absence of ‘presence’ that meets current PE criteria—have no taxing rights at present. By contrast, existing systems allocate taxing rights to countries where production and development activities take place, where the RPAI would tax only routine profit realized, but not—except to the extent that final sales also occur there—the residual profit. It is not clear how one answers the question whether this makes the RPAI more

¹⁰⁰ For recent studies see Suárez Serrato and Zidar (2016); Fuest et al (2018).

or less fair than the existing system. That said, to the extent that multinationals 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 revenue loss to non-market countries 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 RPAI 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 RPAI more clearly aligned than pure destination systems with a more traditional view of fairness in the international allocation of taxing rights.¹⁰¹

Also, compared to these other options, the more traditional approach of the RPAI alleviates concerns about reallocating profit 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 RPAI the higher costs and potentially lower unit revenues incurred in a new market country would be borne by that country rather than spread to all markets. The impact of new markets is discussed further in Section 5.5.

Beer et al (2020) present empirical evidence of the magnitude of residual profit and the distribution of tax revenues among countries if such profit was taxed on a destination basis. They find that around 70% of the profit of the largest multinationals are residual, which implies that the tax treatment of residual profit is important. They also find that these profits are highly concentrated in multinationals that are headquartered in a small number of countries.¹⁰² Moving to a general destination-based RPA would increase global corporation tax revenue by around 8%, since residual profit would then tend to be taxed at higher rates. Low income countries would gain revenue; not necessarily because they have trade deficits, but because they lose a greater share of their potential revenues under the existing regime. In fact, for many countries, even routine profits exceed their existing tax base, which suggests there are potentially significant gains also from a better treatment of routine profit.

4.1.5 Incentive compatibility

We now consider the incentive compatibility of the RPAI in the context of its being universally adopted. Specifically, we address the question of whether, if all countries maintained the RPAI, there would be an incentive for countries to reduce

¹⁰¹ See Schreiber (2018), p. 259 *et seq.*

¹⁰² They also find that many multinationals have negative residual profit, which raises the issue for the RPAI of the tax treatment in these cases, which we address in Section 3.4.3.

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. Typically, they 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 profit elsewhere to tax-favoured jurisdictions. Yet they would also like to make their jurisdictions more attractive to multinationals that may locate their real activities, and possibly also their profit, 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 RPAI adds more complexity to these questions since there are two levels of taxation, with countries potentially choosing to tax routine and residual profit at distinct rates.

To begin with, the base for the taxation of residual profit under the RPAI 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 profit 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 RPAI is the taxation of routine profit where functions and activities take place. As noted above, the benefits to multinationals of moving activities to countries with a low tax rate on routine profit are limited, because the relevant 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 profit, is likely to be as important to location decisions—of real economic activity and of profit—as under 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 profit 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 multinational'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 recognize 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 recognized in the market jurisdiction. This is likely to be particularly attractive for low income countries with limited tax capacity. Such countries are more likely to prefer to specify a fixed mark-up, and a relatively high mark-up,¹⁰³ to ensure a reasonable collection of tax on routine profit.¹⁰⁴ Further, if the tax rate on the routine profit is lower than the average rate that a business will face on its residual profit, then tax authorities and the business may have an incentive to collude to raise the routine profit;¹⁰⁵ that would result in higher tax revenue on its functions and activities, but a lower overall tax liability for the business.

Overall, given these conflicting objectives, and the fact that location 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 RPAI than under the existing system—especially in relation to the taxation of residual profit.

4.2 Unilateral adoption

We now consider the properties of the RPAI 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

¹⁰³ They may alternatively choose a higher tax rate on routine profit, although this may be more salient to businesses.

¹⁰⁴ This is in line with the increased pressure by developing countries to introduce safe harbours for the taxation of local activities of multinationals discussed in Section 3.2.3.

¹⁰⁵ This depends also on any loss in tax that the country would levy on the residual profit of that business being smaller than the gain from the additional tax on the routine profit.

important to assess the incentives for governments to adopt the RPAI 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 RPAI and on those that do not. We do this by evaluating the RPAI in these circumstances against the same five criteria used above: economic efficiency, robustness to avoidance, ease of administration, fairness, and incentive compatibility.

4.2.1 Economic efficiency

For domestic activities within a country that adopts the RPAI, the impact on investment and financial decisions will be broadly the same as if all countries had adopted it. As discussed in the previous section, if the RPAI 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 RPAI on the location of real economic activity.

To think through the implications of only one (or a group) of countries implementing the RPAI, consider three countries. Suppose that A introduces the RPAI, 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 business 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 business produced in B depends on how it would organize 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 business would therefore face a higher tax liability in B than in A, and so would have a tax incentive to locate in the RPAI country, A. It is possible, though, that by using a variety of tax planning techniques, the business can divert its residual profit from B to country H, a jurisdiction with no tax on business profit. This would be consistent with the 'entrepreneurial model' described in Section 1.2. In this case, the business 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 business is able to shift its entire residual profit to a low tax jurisdiction, country A would become a more attractive location for

production by introducing the RPAI. In general, therefore, and subject to differences in tax rates, businesses would have an incentive to move their real functions and activities to countries that unilaterally adopt the RPAI given that they will only be taxed on their routine profit 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 RPAI, 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.¹⁰⁶ Suppose, for example, that the business 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-business 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 business—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 business 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 businesses shift their residual profit to a low tax jurisdiction (not least because of the recent developments in anti-profit shifting measures), then the country introducing the RPAI would become a more attractive location to undertake production. This is clearly because introducing the RPAI would be akin to a move in the tax competition game among countries.¹⁰⁷ The RPAI 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 RPAI a relatively tax-favoured location for production and other economic activities.

Note that the tax on residual profit in the market country should not affect location choices as long as consumers are immobile. However, businesses that purchase capital goods, intermediate goods, and component products from other businesses may face an incentive to locate outside the RPAI country. That is because businesses selling into the RPAI country would face the tax on their residual profit in that country (in addition to any tax they pay in the non-RPAI country), which may

¹⁰⁶ Under the proposal in Schreiber and Fell (2017), A would give a credit for taxes paid in B. However, this would not generally be true under the RPAI.

¹⁰⁷ For a similar argument see Avi-Yonah et al (2009), p. 519 *et seq.*

be reflected in the price charged to the buyer. If a country unilaterally adopts the RPAI, businesses would therefore have an incentive to purchase such goods in affiliates located in states which did not introduce the RPAI. This would offset the benefits of locating in the RPAI country.

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

Broadly, in sum, introducing the RPAI 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 bases in locations where economic activity takes place, and replacing them with a tax base in the destination country. Yet in terms of worldwide economic efficiency, since unilateral adoption would be more likely to affect multinational 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 4.2.5.

4.2.2 Robustness to avoidance

We have already discussed the robustness of the RPAI 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 RPAI ignores within-company flows of debt. A single country introducing the RPAI would benefit from this advantage. However, other countries might be disadvantaged. Suppose again that country A introduces the RPAI, but that country B does not. Then a multinational 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 did not tax the inflow of interest (because related party debt is ignored for tax purposes under the RPAI), then it would create 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 RPAI. How serious a problem this is depends on whether multinationals in B can already use these techniques to shift their profit to existing tax havens, and whether B introduces effective limits to interest deductibility on loans between related parties 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 licence or royalty payment for using the intangible asset. If that payment is deductible in the country from which it is made, then again A would, in effect, be operating as a tax haven for the purposes of this type of income. And again, the importance of that depends on the opportunities that multinationals already have

to divert income in this way to tax havens and whether B can introduce effective limits to deductions for such payments.

The adoption of the RPAI by a single country may therefore aggravate the problems of base erosion and profit shifting in countries that did not implement the RPAI. The quantitative impact of additional profit shifting opportunities on other countries is hard to gauge: multinationals already have many opportunities to shift profit 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 capitalization rules, or by introducing withholding taxes.

4.2.3 Ease of administration

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

Introducing the RPAI 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 RPAI, then the routine profit will be determined by the country in which the economic activity takes place, where functions and activities 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 business operates in country B, which does not introduce the RPAI. The business 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 RPAI. 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 recognize a deduction for the profit declared in B, even if it is not restricted only to routine profit.¹⁰⁸ 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. 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 business produces credible evidence on its costs incurred elsewhere.

¹⁰⁸ Where the tax rates in the two countries are the same, this would be equivalent to the proposal in Schreiber and Fell (2017) which would give a credit for taxes paid in B.

4.2.4 Fairness

Unilateral, as opposed to universal, adoption of the RPAI 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 RPAI 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 multinational 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 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 RPAI—country A reduces its tax rate, then businesses have an incentive to shift activity to A from other countries. In addition, under the RPAI 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.

4.2.5 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 RPAI. We now ask whether a single country would want to implement the RPAI 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 RPAI, these are generally favourable to the country implementing the RPAI. Broadly, the RPAI 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 relatively 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 RPAI would be no different. But in all other cases, the incentives would point towards adoption of the RPAI. Introducing the RPAI could therefore be seen as a move in the tax competition game among 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 an RPAI 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 profit from production activities to reflect to a large extent location-specific rents—and which would therefore be reluctant to take part in tax competition—would be less inclined to give up their claims on residual profit.

So, in many cases, there would appear to be an advantage to moving to the RPAI 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 RPAI might therefore be out-flanked by others introducing a pure destination-based tax, such as the DBCFT.

5. Implementation

The RPAI would allocate routine profit to the location of functions and activities and residual profit 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. This section discusses the most important issues. Of course, considerably more detailed work would have to be undertaken to address these in practice. 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 RPAI were implemented.

We discuss practical issues under six 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; expansion into new markets; and legal issues arising from the possible need to overturn existing treaties.

5.1 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 distortions to the legal form of businesses and to avoid 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 profit of unincorporated businesses is allocated to the business owners and is 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 RPAI is designed to address international issues in the allocation of profit among 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 RPAI 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 market equally with respect to their residual profit.¹⁰⁹ 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 RPAI 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 RPAI 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 RPAI, as long as the tax rates on routine and residual components were the same. It would be simpler for such businesses not to have to distinguish between routine and residual profit. For businesses with modest exports, there would be a trade-off between the possible competitive advantage and the greater complexity in identifying routine and residual profit separately. It could be left for small

¹⁰⁹ A related but separate issue has been discussed in Section 3.4.1. 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 RPAI is neutral in the treatment of these different options for cross-border sales.

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.

5.2 Boundaries of the multinational

Since the RPAI contains one element of an apportionment system, for non-allocable expenses, a question arises as to what businesses should be included in this apportionment. This is an issue that we discussed in Chapter 4 in the context of formulary apportionment systems. As we noted there, the idea of an apportionment 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.¹¹⁰ 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.¹¹¹

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 organize their affairs to be just on the more favourable side of the line for tax purposes. Depending on circumstances, a multinational may want to include, or exclude, an affiliate in its overall RPAI assessment. This could distort business decisions, sometimes with real economic consequences, and also create greater complexity.¹¹² In practice, however, accounting treatment is typically based on the 50% ownership rule. It is perhaps unlikely that a multinational would be willing to adjust its financial statements significantly in order to manipulate the bright line for tax purposes. So following a 50% ownership test seems a reasonable compromise.

However, the problem of defining the boundary of the business is smaller in the context of the RPAI than with other RPA systems, or with a more general formulary apportionment system. That is because, ultimately, the only apportionment

¹¹⁰ See Schön (2007), p. 1073 *et seq.*

¹¹¹ Article 5 of the CCCTB Draft Directive.

¹¹² In principle, it would be possible to include a proportion of an affiliate in the RPAI 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.

within the RPAI system is of non-allocable costs. That is, in the absence of non-allocable costs, then there would be no apportionment within the RPAI. The benefits of including, or excluding, an affiliate in an RPAI assessment are therefore likely to be relatively small.

5.3 Defining the tax base

Under a system of formulary apportionment, the principle is that total profit should be determined and then allocated among countries. This raises the question of the need for harmonizing the tax base. If countries use different definitions of the tax base, then there will not be an agreed measure of total profit. Each country may then base its own entitlement on its own measure of profit. To prevent this, the European Commission plans first to harmonize the tax base—the Common Corporate Tax Base (CCTB)—before consolidation across Member States is introduced.¹¹³ US states do not have common definitions of the tax base, but they are broadly similar, drawing from the federal tax base.¹¹⁴

There are at least two reasons within the RPAI to question whether there is a need to define a common base across countries. The first is that transfer prices within a multinational group will depend on costs and the associated routine profit, determined at least initially in the country in which the costs are incurred. Differences in allowing costs—for example, in depreciation provisions—might affect the tax base in other countries. Second, there is an element of apportionment under the RPAI due to the treatment of non-allocable costs.

In practice, some balance is required in addressing this question, since reaching international agreement on a common definition of the tax base amongst all countries could prove extremely difficult (as has been found in the EU, for example). The question therefore is whether the problems that might arise in not having such an agreement would be serious for the properties of the RPAI. It seems probable that a reasonable outcome could normally be achieved without the need for harmonizing the tax base. Three elements of the RPAI should be considered.

First, current international transfer pricing under the OECD guidelines or the US 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 higher or lower taxation due to double or 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 RPAI than under the existing system. As a matter of substance, there is a need to determine transfer prices for trade between affiliates

¹¹³ European Commission, Proposal for a Council directive on a common corporate tax base, COM(2016) 685, 25 October 2016.

¹¹⁴ Hellerstein (2013).

of a single multinational group (and transfer prices on deemed transactions 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 a country 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 harmonization 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 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 RPAI requires the allocation of non-allocable costs 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. With different tax bases, these valuations could differ between countries. Again, however, the apportionment 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 of residual 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 RPAI could reasonably avoid the complications of agreeing a common tax base.

5.4 Collecting tax on a destination basis

A key element of the RPAI is that residual profit is taxed in the market country, or the country of destination. To make the RPAI 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 multinational; a multinational can reasonably be assumed to know the location of all third party sales made by its affiliates. Where the multinational 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 for the RPAI: 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 business 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 over the past twenty years.

Similar issues arise in relation to sales to unrelated distributors, as discussed above. If sales locations could again be manipulated to allocate residual profit 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 profit 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 the tax authority must deal with the selling business located abroad directly.

Governments already have significant experience through the VAT of taxing remote sales in a destination country, including 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 back-up withholding, regime would be required of unrelated party distributors that bring goods into a country for ultimate sale to make sure that businesses 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 multinational to have a taxable presence in the market country goes significantly beyond anything the OECD and most countries have traditionally been 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 profit of certain highly digitalized businesses in the location of the user 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 or no UK presence, compliance with the tax does not impose significant administrative burdens.’¹¹⁵ Furthermore, as discussed in Chapter 3 and earlier in this chapter, at the time of writing proposals are being discussed by the OECD’s Inclusive Framework which would go beyond existing PE rules more generally.

5.5 Expansion into new markets

Another issue is what happens when a multinational business with potential residual profit expands into new markets. Should the residual profit be taxable in

¹¹⁵ HM Treasury (2018).

that market country from the date the business first generates such profit 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 carried forward from earlier periods, then it could be argued that the current profit should be first allocated to those countries in which those losses occurred. That is, countries with prior year losses should be given priority in the allocation of residual profit, with the new market country able to tax residual profit 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 country over, for example, a three- or five-year period. The profit not allocated during the transition would increase the residual profit of other countries that are fully phased in.

5.6 Treaties

Most double 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 profit arising from intangibles by the jurisdiction of 'use' in favour of taxation by the jurisdiction that finances and manages intangible development activities. The RPAI deviates materially from these provisions. For example, treaty country businesses that sell goods or services to a related party in a country adopting the RPAI could challenge the allocation of residual profit to that country and would likely 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 the RPAI 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 US, and the UK) where legislation can in certain circumstances override treaties. Nevertheless adopting the RPAI by legislation would not make the concurrent breach of international treaty law disappear.¹¹⁶

Note that treaty reform would also be required to adopt the Unified Approach being considered at the time of writing by the Inclusive Framework, or other proposals for taxing highly digitalized businesses being considered unilaterally by some countries, such as the UK's 'user participation' proposal.

¹¹⁶ Sachdeva (2013).

6. Conclusions

This chapter has set out an alternative system, the RPAI, for allocating international business profit among 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 profit to countries where multinationals' functions and activities take place. It allocates taxing rights over residual profit to market countries, where the multinational makes sales to independent, third party customers.

The key aims of the RPAI are to combat profit shifting and to reduce economic distortions thus also reducing competitive pressures experienced by countries under the existing system. However, another important aspect of the system is that it is intended to be reasonably close to the existing system, to minimize 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 (or, should that prove overly difficult, by mechanical mark-ups). Comparables used to determine routine profit would therefore be based on third party outsourcing businesses, in the form of contract manufacturers, researchers, logistic providers, and marketers; the returns of such comparable businesses should not reflect the overall risk of the multinational's business.

Transfer prices within the multinational 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 the third party costs they have incurred 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 multinational's total RGI earned by that affiliate. The RPAI 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 relocate 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 significantly reduces the incentive for multinationals 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 multinational 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 RPAI routine profit 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 RPAI.

The guiding principle behind the RPAI is the relative immobility of third party customers, but the proposal is tempered by practical considerations. The RPAI 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 RPAI should partly harness the substantial benefits arising from the relative immobility of customers, thus offering significant promise as a tax system that is fit for purpose for years to come.