Taxing Multinational Enterprises as Unitary Firms

Edited by Sol Picciotto

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The international tax system needs a paradigm shift. The rules devised over 80 years ago treat the different parts of a multinational enterprise as if they were independent entities, although they also give national tax authorities powers to adjust the accounts of these entities. This creates a perverse incentive for multinationals to create ever more complex groups in order to minimise taxes, exploiting the various definitions of the residence of legal persons and the source of income. While states may attempt to combat these strategies, they also compete to offer tax incentives, many of which facilitate such techniques to undermine other countries' taxes.

Several alternative approaches have been identified, which start from the economic reality that multinationals operate as unitary firms. These include residence-based worldwide taxation, under which the ultimate home country of a multinational taxes its worldwide profits but with a credit for equivalent foreign taxes paid; a destination-based cash flow tax, which attributes the tax base to the country of ultimate sales to third parties; and unitary taxation with formulary apportionment, which apportions the firm's consolidated profits according to factors reflecting its real presence in each country.

This volume outlines the nature of the problem and discusses attempts to resolve it, including the recent G20/OECD project on base erosion and profit shifting (BEPS). It then explores unitary taxation with formulary apportionment. The contributions discuss how to move towards such a system starting from the current rules; the role of accounting in defining the consolidated tax base; lessons from the experience of existing formulary systems, especially in the USA; evidence from quantitative studies of tax base misalignment under current rules and the possible effects of different apportionment formulas; specific issues in the finance and extractive industries sectors; and the prospects for regional adoption.

Sol Picciotto is Emeritus Professor of Lancaster University (UK), coordinator of the BEPS Monitoring Group, and a Senior Fellow of the ICTD.

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Acronyms

ALS	Arm's Length Standard
APA	Advance pricing agreement
BEA	Bureau of Economic Analysis
BEPS	Base erosion and profit shifting: a term coined by the OECD in 2012, to refer to the tax avoidance techniques used by MNEs to reduce their overall taxable profits, and shift profits from high- to low-tax countries
CAN	Andean Community
CbCR	Country-by-country report (required under changes to the OECD Transfer Pricing Guidelines to be filed in its home country by the ultimate parent entity of any MNE with a turnover greater than €750 million, and sent to tax authorities of every country where it declares a taxable presence, subject to conditions to protect confidentiality and appropriate use)
CCCTB	Common Consolidated Corporate Tax Base (a proposal for introduction of unitary taxation within the EU, involving a common tax base definition and a formula for apportioning the taxable base attributable to entities of a corporate group within the EU)
CFC	Controlled foreign corporation (a foreign subsidiary, the income of which may be treated as included in the parent's taxable profits)
CIT	Corporate income tax
CPM	Cost Plus Method (one of the five accepted transfer pricing methods)
CUP	Comparable Uncontrolled Price (one of the five accepted transfer pricing methods)
DBCFT	Destination-based Cash Flow Tax

DTA	Double Taxation Agreement
EAC	East African Community
EBITDA	Earnings before interest, tax, depreciation and amortisation (a widely-used accounting concept of corporate income)
EBT	Earnings before tax
ECJ	European Court of Justice
EI	Extractive industry
EITI	Extractive Industries Transparency Initiative
EU	European Union
FASB	Financial Accounting Standards Board (US)
FIFO	First in, first out
FDI	Foreign Direct Investment
G7	the Group of 7 leading states (Canada, France, Germany, Italy, Japan, UK and USA)
G8	the Group of 8 leading states (the G7 plus Russia)
G20	the Group of 20 leading states (the G8 plus Argentina, Australia, Brazil, China, the EU, India, Indonesia, Mexico, Saudi Arabia, South Africa, South Korea and Turkey)
GAAP	Generally Accepted Accounting Principles
GDP	Gross Domestic Product
GNI	Gross National Income
GSP	Gross State Product
HMRC	HM Revenue and Customs (the UK tax authority)
IASB	International Accounting Standards Board
ICTD	International Centre for Tax and Development
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IRS	Internal Revenue Service (the US tax authority)
LAFTA	Latin American Free Trade Association
LAIA	Latin American Integration Association
LIFO	Last in, first out
MC	Model convention
MNE	Multinational enterprise
MNFI	Multinational financial institution
MNMM	Modified Net Margin Method
MTC	Multistate Tax Compact
NAFTA	North American Free Trade Agreement

NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PE	Permanent establishment (a concept that defines the degree of presence of a foreign corporation in a country that gives rise to taxable presence – basically a fixed physical base for at least six or twelve months)
PPT	Petroleum Production Tax (for Oil and Gas)
PSM	Profit Split Method (one of the five accepted transfer pricing methods)
RBWT	Residence-based worldwide taxation (also referred to as a full-inclusion CFC regime)
REDE	Revenue Enhancement for Developing Countries
RPM	Resale Price Method (one of the five accepted transfer pricing methods)
RRT	Rent Resource Tax
SA	Separate accounting
TFDE	Task Force on the Digital Economy (set up under BEPS Action 1)
TFEU	Treaty on the Functioning of the European Union
TNC	Transnational corporation
TNMM	Transactional Net Margin Method (one of the five accepted transfer pricing methods)
TPGs	Transfer Pricing Guidelines
UDITPA	Uniform Division of Income for Tax Purposes Act
UT	Unitary taxation
VAT	Value Added Tax

Introduction

This collection of papers aims to contribute to the ferment of debate about the international tax system and its reform. They result from work by an international network of researchers supported by the International Centre for Tax and Development (ICTD). This research programme was conducted in parallel with the project on base erosion and profit shifting (BEPS) carried out through the Organisation for Economic Co-operation and Development (OECD) for the G20, and papers resulting from our work have been published in parallel with the reports from that project. This collection aims to summarise those outputs, and discuss how they relate to the continuing reform process.

The G20/OECD project was clearly very different from an academic research programme. The BEPS project had the extremely ambitious aim of achieving consensus among a very large group of governmental tax authorities on reforms that could achieve a major reorientation of international tax rules – within a very tight timescale of some 30 months. Given these constraints the final package was clearly a major achievement, and is a tribute to the determination and dedication of the officials involved.

The BEPS outputs aim to strengthen the system, and give better tools to tax authorities if they have the capacity and will to use them. Overall, however, the proposals are a patch-up of existing rules, making them even more complex and dependent on technical expertise to administer, and do not tackle the more fundamental flaws of the system in a coherent way. Nevertheless, this is an important first step on a longer road. The G20 project itself is continuing, both to supervise and coordinate implementation, and to work on some key issues that were not dealt with in its main phase. Indeed, the BEPS project's outputs have not resolved fundamental problems of how to apportion multinational enterprise (MNE) profits, especially in the digitalised economy. We hope that our research will help to inform these policy debates.

The continuing BEPS project agenda requires closer examination of the fundamental question posed by taxation of MNEs: the criteria for apportioning the tax base among the various countries where such firms have business activities. The G20 mandate for the BEPS project requested that international tax rules should be reformed to ensure that MNEs would be taxed 'where economic activities occur and value is created' (G20 2013: 4). This implies that MNEs should be treated in accordance with the business reality that they operate as single firms. Although the final BEPS project proposals did not accept this explicitly, in some respects they did move in that direction. However, the proposals remained unclear and complex on the crucial question of criteria for allocating profits. Hence, although they open up a new road for the international tax system, the direction of travel is uncertain.

This book explores the issues raised for international tax rules of explicitly adopting a unitary approach to MNEs. This would undoubtedly entail a paradigm shift, involving a wrench to the mindset of many international tax professionals. Yet, as outlined in the first chapter, both the history and the current reforms of international tax rules are marked by a tension between the unitary and independent entity perspectives. Chapter 2 begins by outlining several alternative approaches that have been proposed, which entail treating MNEs as unitary firms. The rest of that chapter analyses the issues raised by the approach explored in the research presented in this book, unitary taxation with formulary apportionment, and hence introduces the remaining chapters.

Chapter 1

The Current Context and a Little History

Sol Picciotto

Summary This chapter sets out the background and context for the work presented in this book. It first briefly explains why reform of international corporate taxation is particularly important for developing countries. It outlines the flaws in the current system and the impetus created for reforms, and then discusses the political economy of the international tax treaty system, and of its reform. Finally, it provides an evaluation of the results of the G20/OECD project on base erosion and profit shifting (BEPS), focusing essentially on the extent to which they moved towards a unitary approach, and the problems created by their continued adherence to the independent entity principle.

The importance of the issue

Although opinions differ about the desirability of corporate income taxation as an abstract economic question, restoring its effective application to the largest and most powerful global firms is, in practice, an important goal of public policy. This is especially the case for developing countries, for several reasons.

First is the effect on government revenue. The percentage of government revenue derived from corporate income tax (CIT) varies, but it is fiscally significant in virtually all countries. Low-income countries, in particular, are generally more dependent on CIT, which on average accounts for 16 per cent of their revenue – compared to 8 per cent for high-income countries (Crivelli, de Mooij and Keen 2015). In most developing countries the formal economy is dominated by foreign-owned firms, while much domestic economic activity occurs informally with few, if any, books and records maintained. This makes it harder for governments to raise revenue from individual income taxes and consumption taxes. For these countries, corporate taxation, and especially taxation of the profits of foreign-owned companies, represents a substantial portion of the potentially-available revenue base. These countries cannot afford to sacrifice large proportions of their corporate tax bases, and the perpetuation of international tax avoidance, now referred to as base erosion and profit shifting (BEPS), therefore poses a significant national hardship for them.

Secondly, restoring the integrity of corporate taxation is also important for its indirect impact on revenue, as corporate tax avoidance undermines public confidence in the legitimacy of taxation more generally. This has become particularly evident in developed countries due to the fiscal crises and resulting damage to faith in public institutions following the financial crash of 2008-9. These concerns greatly contributed to the political impetus leading to the BEPS project. Public confidence in the fairness of taxation, and of CIT in particular, has been greatly shaken by the significant evidence of considerable revenue losses due to international avoidance, especially from countries with comparatively higher CIT rates. An analysis by Clausing, based on the comprehensive data available for US-based multinational enterprise (MNE) corporate groups, suggests significant and increasing losses from such avoidance for the US government, reaching between $77 billion and $111 billion annually by 2012. Her more speculative extension of these calculations to MNEs based in other countries suggests losses for all such countries (including the US) of perhaps $280 billion (Clausing 2015). Estimates by International Monetary Fund (IMF) economists, using a different approach, suggest that the long-run losses for advanced economies are in the order of 0.6 per cent of their GDP, but proportionately three times greater in developing countries – reaching almost 2 per cent of GDP (Crivelli *et al.* 2015).

Developing countries also have a very different perspective on taxing MNEs than developed countries. Firstly, they are mainly capital-importing countries, and hence host countries for MNEs. Tax treaties essentially restrict rights to tax income at source, in the interests of encouraging reciprocal international capital flows. For countries that are capital importers they impose asymmetrical obligations, to the point that they have been described as a poisoned chalice for developing countries (Brooks and Krever 2015; Hearson and Kangave 2016).

Yet, for the past half-century the formulation of international tax rules has been dominated by the developed countries of the OECD, with the UN Committee of Tax Experts playing only a secondary role (Picciotto 2013). The BEPS project partly bridged this gap, because it was taken up by the G20. Hence participation was extended to include the eight non-OECD G20 countries,[1] and subsequently a further 14 developing countries were also invited to join.[2] In February 2016 an Inclusive Framework was established: this allows any country to join in the continuing BEPS agenda as Associates, turning the OECD Committee on Fiscal Affairs into a global tax body for some purposes. Nevertheless, the OECD countries set the scope of the project, which explicitly excluded any reconsideration of the allocation of taxing rights between residence and source countries. In practice the issue was hard to avoid, especially as many OECD countries have experienced the difficulty of taxing foreign-based internet companies and service providers. Inevitably, the BEPS discussions and negotiations were dominated by the concerns of the large countries that are home to MNEs, and this can be seen in the outcomes.

Thirdly, developing countries need tax rules that as far as possible can be administered easily, without the need for specialist and highly-trained staff applying subjective judgements. Recognising that some of the BEPS proposals would be difficult for developing countries to apply, the G20 Development Working Group was tasked with the development of toolkits on key aspects. This work has now been given to a Platform for Collaboration on Tax, which will coordinate the work of the international organisations in this field. Yet it is legitimate to ask whether, rather than tools to adapt rules that have been formulated by richer countries, which they themselves have found hard to apply, it would not be better to investigate simpler and clearer rules that might be more suitable for all. This has also been the focus of ICTD research, some of which will be discussed further below.[3]

Finally, it is important to bear in mind that many of the techniques of international tax avoidance entail making use of the tax haven and offshore finance and secrecy system. These same facilities are also used for a much wider range of activities, including capital flight and concealing the proceeds of corruption and crime, which are also especially damaging for developing countries (High Level Panel 2015). The estimates that have been made by various parties of the magnitude of illicit flows through this system clearly far exceed the sums involved in corporate tax avoidance, and the bulk of those flows do not involve direct losses of government revenue. Nevertheless, there are links between corporate tax avoidance and the more general illicit flows, particularly as both take advantage of the same facilities and techniques. Furthermore, it can be said that the growth of a culture of increasingly aggressive tax planning, and its toleration as a valid business strategy, have also affected the boundaries of acceptable behaviour in other areas of regulation. If international tax reform could remove the incentive for MNEs to use the offshore system, it would clearly be a significant step towards ending the wider damaging effects of this system.

Flaws in the system, and the impetus for reform

The role of international tax avoidance in the creation and continuation of the tax haven and offshore secrecy system can be traced to a fundamental flaw in the international tax rules, designed almost a century ago. These rules were primarily aimed at international portfolio investment, the dominant form at that time. Hence, they gave the primary rights to tax business profits (so-called 'active' income) to the country where the business was located, while returns on investment (interest, dividends, etc, referred to as 'passive' income) should be taxed in the country of residence of the investor.

It was already understood, however, that foreign direct investment by MNEs posed special problems, since it was hard to determine the appropriate level of profits of the various affiliates (branches or subsidiaries) of a multinational corporate group. A study for the League of Nations in 1932-3 showed that countries used different methods (League of Nations 1932-33). Some countries (notably Spain) started from the global profits of the MNE as a whole, and apportioned profits to the local entity by applying coefficients appropriate to each business. Most started from each entity's own accounts (especially if it was a separately incorporated subsidiary), although they generally had powers to adjust those accounts. A common approach was to check that the profits taxed in each country were similar to those of independent firms in the same line of business (referred to as empirical methods). Consequently, special provisions were agreed in 1935; these were incorporated into the model tax convention, and eventually into bilateral treaties. These gave tax authorities powers to adjust the accounts of related entities, to prevent diversion of profits. In the case of a branch, they allowed an apportionment to it of an appropriate fraction of the company's total profit, and this provision remains today in many treaties, especially of developing countries.[4]

The tax treaty provisions were, however, ambiguous. On the one hand, they gave tax authorities powers to adjust the accounts of related enterprises, or of the permanent establishment (PE) of a foreign corporation, based on the understanding that they are related parties under unified control. On the other hand, the principle to be applied was that the income should reflect what might be expected if the entities were independent. Consequently, the system as it has developed historically has included both 'unitary' and 'independent entity' elements. It has remained ambivalent between the two. Since that time, the methods that have been developed for allocating the income of multinational corporate groups have in practice been hybrids of the independent entity and the unitary approaches.[5]

Unfortunately, especially in the period of rapid growth of MNEs from the 1960s, many firms began to take advantage of this independent entity principle to reduce their overall tax liabilities, by creating intermediary entities in convenient jurisdictions. Applying the treaty principle literally, each entity should be considered as if it were independent. Intermediary entities, which might exist only on paper, could own assets or perform functions for which operating affiliates would pay royalties, interest or fees. Since these are deductible from profits, they reduce taxation of the business profits at source. Yet these payments could remain untaxed by channelling them through conduit entities to take advantage of treaty benefits, and on to base affiliates in zero-tax countries. Such techniques enabled MNEs to defer taxation on retained earnings, which was a major factor in financing the expansion of especially US-based MNEs.

Today, most MNEs typically consist of hundreds of affiliates, forming complex corporate groups. The shift to the knowledge economy and digitalisation has also facilitated the restructuring of MNE operations around global value chains, which can be tax-driven. This enables the fragmentation of different business functions (research, design, assembly, marketing, distribution), as well as management and back-office activities. The independent entity principle enables MNEs to attribute only routine levels of profit to entities in high-tax countries, while using payments for intangibles, finance and fees to channel substantial revenue to low-taxed affiliates. Countries now compete to offer tax advantages to attract the location of entities that perform such high value-adding functions.

The measures adopted by tax authorities to counteract these strategies have continued to remain ambivalent. Some provisions override the fiction of separate entity, such as rules allowing taxation of the undistributed income of a controlled foreign corporation (CFC) as part of the tax base of its parent.[6] Others, particularly the rules on transfer pricing, have increasingly emphasised the independent entity principle, while aiming to decide an appropriate allocation of profit by allowing the adjustment of prices of transactions between related entities.

Since the 1980s, many independent commentators have advocated a reform of international tax rules based on treating MNEs as unitary firms.[7] However, European MNEs strongly objected in the 1970s when US states, notably California, began to apply their formulary apportionment approach on a worldwide basis.[8] They received high-level political support, and US federal legislation was enacted to substantially restrict state application of formulary apportionment to within the US (Picciotto 1992). In parallel, the introduction of a new approach to transfer pricing by the US at federal level caused conflict at the OECD. This was eventually resolved by agreement to introduce new transfer pricing methods using economic analysis to determine appropriate levels of profit, including the Profit Split Method (Durst and Culbertson 2003). Since then, the discreet cloak of ambiguity has remained in place.

As corporate tax strategies have become more sophisticated, the counter-measures have become increasingly inadequate. Governments are clearly at a great disadvantage compared to MNEs, both in terms of resources, and of their ability and incentive to coordinate. The problem of inadequate resources, especially of expertise, is obviously particularly great for poorer countries, but the large OECD countries have also faced increasing administrative strains (Aaron and Slemrod 2004). Kenya, for example, has recently benefited from capacity-building from the OECD, establishing a transfer pricing unit of some 20 staff – the same number of people are employed to advise on transfer pricing in one single private sector firm in Nairobi, KPMG.

As regards coordination, MNEs have an even greater advantage, since they are centrally directed, although from their perspective they feel threatened by the diversity of national regimes and the potential for conflicts between them. Indeed, such conflicts have increased in recent years, as more countries have strengthened their enforcement of international tax rules, especially on transfer pricing. Many developing countries have introduced such rules only in the past decade or less, and are now activating them. Large developing countries such as Brazil, China and India have adopted approaches that diverge from those of leading OECD countries, causing friction and conflict.[9] Coordination between governments through the network of bilateral tax treaties based on the model conventions is flexible, but also slow and clumsy. The tax treaty system was described, perhaps generously, as a 'flawed miracle' by Reuven Avi-Yonah in 1996 (Avi-Yonah 1996: 1304).

The flaws have created an increasing political impetus for stronger coordinated action. This was first taken up by the G7 leaders in 1996, resulting in an initiative through the OECD on Harmful Tax Competition (OECD 1998). This was initially aimed at both the classic low- or zero-tax havens and the increasing number of states offering preferential tax regimes, such as Ireland (which at that time offered ten-year tax holidays to inward investors). However, the OECD initiative was weakened following a change of the US administration, and it refocused on a programme for improving tax information exchange through bilateral treaties.[10]

A decade and two international financial crises later, the political pressure had become stronger. The G8 leaders at their summit in 2013 agreed to establish a new global standard of multilateral and automatic exchange of tax information, as well as transparency of beneficial ownership. In the meantime, the retirement of Jeffrey Owens from the OECD's Centre for Tax Policy and Administration in 2012 provided the opportunity for a new initiative on international tax rules. His successor, Pascal St Amans, quickly started an initially low-key project under the highly technical title of base erosion and profit shifting (BEPS). This brought together issues that the OECD had already identified, including some on which work had been done. The growing fiscal crises resulting from the financial crash further heightened the political urgency, as well as requiring a broadening of the political base from the G8 to the G20. *The Action Plan on BEPS* published by the OECD in July 2013 (OECD 2013) was formally adopted by the G20 leaders, who gave it a strong political mandate, in the *St Petersburg Declaration* of September 2013 (G20 2013).

The politics and technocracy of the BEPS process

It is important to bear in mind that international tax rules deal with the allocation between states of their *rights* to tax.[11] This does not mean that states will necessarily exercise those rights to actually impose tax.

Indeed, international tax policy has been dominated by the concern of governments to encourage investment from abroad, and hence to offer tax exemptions or incentives to foreign-owned business. In this respect there can be some divergence between officials in the revenue departments, who are responsible for collecting tax, and those from other branches of government, whose concern is to encourage investment – such as ministries of finance, departments responsible for promotion of business investment, or those dealing with specific sectors such as mining. Responsibility for tax treaties and their negotiation is a specialism distinct from tax administration, and usually comes more directly under the Ministry of Finance than the tax administration. Certainly, since the 1950s both the drafting and negotiation of tax treaties have been aimed at preventing double taxation, in order to encourage investment. In developing countries in particular, tax treaties are often signed by governments as a political gesture, with little or no involvement of the tax authority.[12]

The BEPS project signals a major redirection of perspective. It resulted from the perception by some officials that international tax rules should also aim to prevent 'double non-taxation'. This was also fuelled by academic articles highlighting the issue of corporate income that is not taxed anywhere, described as stateless (Kleinbard 2011a) or homeless (Wells and Lowell 2011). Dealing with double non-taxation entails stronger coordination of tax rules and their enforcement, in order to close the loopholes that can be exploited for tax avoidance. A good example is the issue of 'hybrid mismatches'. These occur when a company takes advantage of differences between two treaty partners in their classification of an entity (e.g. whether it is a company or a partnership), or of a financial instrument (whether it is equity or debt). This can enable the firm to take a deduction from gross profits in the source country for a payment that is nevertheless untaxed in the destination country.[13] The BEPS Action 2 report recommends that source countries should generally deny deductions for such payments, or, if they do not do so, the destination country should treat them as taxable income.

This entails a different view of tax sovereignty than has hitherto prevailed, since it means that the source country's decision on whether to allow a deduction should depend on the tax treatment by the destination country. From a strict tax sovereignty perspective, if the source country has agreed a treaty that gives the right to tax a payment to the destination country, the latter also has the right to exempt it from tax. Although the issue of hybrids can be explained relatively easily, the technical details are esoteric, and the solutions that have been proposed involve managing complex interactions through elaborate and sophisticated rules.[14] Developing countries have taken the view that this issue is not a priority for them. More broadly, there may be some reluctance to move towards a reformulation of international tax rules to end double non-taxation if this is seen as restricting source country taxing rights, which is a strong concern for developing countries. Sovereignty is still seen by some, especially from developing countries, as including retaining the right not to tax foreign investors.[15] Conversely, the home countries of MNEs continue to defend their rights of residence taxation, while providing generous exemptions for foreign-source income.

The political mandate for the BEPS project was expressed in broad and simple terms. It called for a reform of international tax rules to ensure that firms could be taxed 'where economic activities occur and value is created' (OECD 2013: 4). However, it also insisted that 'changes to international tax rules must be designed to address the gaps between different countries' tax systems, while still respecting the sovereignty of each country to design its own rules' (G20 2013: 4). These aims are contradictory. As the example of hybrids shows, closing loopholes involving differences between national laws entails closer coordination of both law and policy. The conflict is exacerbated when a government decides that its tax system must be competitive in order to be business-friendly. This generally signals a willingness to tax corporate profits more lightly, either by offering incentives or by lowering the tax rate. Stronger international tax coordination would inevitably restrict national government's powers to grant many such preferences.

This broad but contradictory mandate from the G20 was entrusted to the tax specialists based at the OECD, who after over two years' exhausting work produced a final package of detailed technical recommendations.[16] As outlined in the next section, these could give greatly strengthened powers to revenue authorities, depending on the willingness of governments to introduce the necessary legislation, and the determination and ability of tax authorities to enforce those powers. However, they fail to provide clear principles, especially for defining where value is created. Instead, this is left to be dealt with by applying complex methods for making transfer price adjustments based on analysing each company's business model.

This outcome can be readily understood if we consider the nature of the negotiating process, and the concerns of the various parties involved. Governments sought reforms that could give tax authorities stronger powers to deal with avoidance, while retaining the scope for politicians to design their own rules. A more effective solution, which would entail explicit abandonment of the independent entity principle and treating MNEs as unitary firms, would largely deprive them of this power to tweak national tax rules to try to attract investment by MNEs.

The officials directly involved in the process, especially the transfer pricing specialists, generally understand (at least implicitly) that the rules rest on a basic conceptual flaw, resulting in the need for decisions on a case-by-case basis. For them, this ad hoc approach is necessary because it is not possible to reach agreement on general principles for allocating profits based on where economic activities occur and value is created. Those from developed countries, such as the USA, consider that in today's economy value mainly derives from the innovation and research that produce advanced technology and other intangibles, and that this is mostly done in, or directed from, the home countries of MNEs. Those from G20 developing countries with large markets, such as China and India, argue that the market also creates value (as Alfred Marshall said, supply and demand are like scissor blades, both are needed for cutting). But technical specialists consider that it is not their role to resolve these questions in a principled or overt manner, by agreeing factors and weightings for allocating profits. They also consider that political agreement on such criteria would be impossible. Instead, the BEPS reports have produced considerable elaboration of the transfer pricing rules (see next section).

Thus, instead of resolving the central issue by a principled agreement, the problems have been deferred to be decided on an ad hoc basis. The main beneficiaries are the specialists, particularly in transfer pricing, which has grown to be an enormous field of professional practice in the past 30 years.[17] Their considerable investments in intellectual capital make it hard for most of them to envisage or accept a new approach, and the increased complexity will further enhance the value of their expertise. It will also create an even higher entry barrier for newcomers, particularly from the many developing countries that have introduced transfer pricing regulations only in the last five to ten years. Many aspiring professionals will no doubt relish this challenge, but if the rewards for some individuals are high, so is the social cost of devoting scarce skills to operating a defective system.

This consensus in the epistemic community of international practitioners has created an obstacle to informed public debate on the issue. This has been described as 'cognitive regulatory capture' by Langbein (2010), borrowing the term from Willem Buiter in his critique of similar links between central bank policies and the banking community (Buiter 2008). In principle, the main hope for pressure for a new approach should come from MNEs themselves. They now face the possibility of strengthened enforcement, including by an increasing number of middle-income and even poorer developing countries; the ad hoc and subjective nature of many of the rules to be applied will inevitably generate conflicts. Indeed, in addition to conflicts caused by the divergent approaches adopted by Brazil, China and India already mentioned, there has already been a rising tide of disagreements among OECD countries.[18]

Hence, business representatives have pressed for stronger dispute resolution procedures, and the report under BEPS Action 14 proposes measures, especially to strengthen the independence of officials responsible for settling conflicts. Further, some 20 countries have also committed to agreeing to compulsory binding arbitration, long demanded by MNEs. However, these procedures are remote from any concept of independent adjudication: they are conducted entirely in secret, nothing is published even about the existence of a dispute, and only the raw data of numbers of cases by country has been collated by the OECD. This extraordinary level of opacity suggests that the participants could not justify the decisions to a wider public. The suspicion is that the issues are dealt with essentially by bargaining, which the participants naturally wish to conduct in private. Those involved place great faith in their ability to reach agreement based on a common understanding, but this confidence is belied by the growth in conflicts and the increasing time taken to resolve them, even among OECD countries.

Some MNE representatives can now be heard to say, especially in private, that a unitary approach would be preferable, but with the proviso that it must provide certainty in the profit allocation. These voices may grow louder, although only if strengthened enforcement leads to a significant closing down of the scope for minimisation of tax, as well as an increase in inconsistent decisions and conflicts.

Appraisal of the BEPS project outputs

The BEPS project outputs have not resolved the tensions between the unitary and independent entity elements in the system, but in many ways have sharpened them. The initial BEPS Action Plan stated that 'there is consensus among governments that moving to a system of formulary apportionment of profits is not a viable way forward' (OECD 2013: 14). On the other hand, the general objective of the Action Plan was to achieve reforms that would align rights to tax more closely with real economic activity, to ensure that MNEs could be taxed 'where economic activities take place and value is created' (G20 2013: 4). This implies a shift towards acceptance of the unitary principle. However, the rejection of formulary apportionment seems to have been used as a reason for refusing to resolve the tensions between the independent entity and unitary principles.[19] As a result these tensions continue to underlie the proposals, undermining the coherence and potential effectiveness of the package.

This section will give a general overview of the BEPS final reports, especially to show how those proposals that entail a move towards a unitary approach could produce improvements, while those that continue to emphasise independent entity will create further difficulties.

Hesitant moves towards a unitary approach

A number of the proposals in the final BEPS package do entail a shift towards treating MNEs as unitary firms, although this is not made explicit. The major achievement is the formulation of agreed templates for country-by-country reports (CbCRs) and for transfer pricing documentation. These will, for the first time, provide all interested tax authorities with a clear overview of MNEs as a whole, as well as details of the relationships between the different parts. The scheme takes effect as a chapter of the OECD *Transfer Pricing Guidelines* (OECD 2010), which are applied in practice even by countries that are not OECD members. Hence, although its detailed provisions are only 'soft law', it establishes a global standard that countries can adopt and implement in binding local law. OECD countries have moved quickly to do so, and developing countries should follow suit.

CbCRs will be required only for the largest MNEs (turnover higher than €1 billion), at least until the scheme is reviewed in 2020. They are supposed to be delivered to the home country tax authorities, and shared with others subject to confidentiality and appropriate use protections. These arrangements create unnecessary obstacles, especially for developing countries. Publication would be a far easier and better solution, and may be the eventual outcome.[20] Availability of the reports will allow tax authorities to evaluate MNEs as unitary firms, but the scheme insists that they should be used only for risk evaluation, and not as a basis for formulary apportionment. In contrast to the CbCR, the master file for transfer pricing documentation should be delivered to all relevant tax authorities directly, together with a specific country local file. Also, these can be required from any firm with a taxable presence in more than one country, and will provide significant detail facilitating audit. All countries should ensure they have legislation in place that enables their tax authority to obtain this information.

Perhaps unsurprisingly, the BEPS negotiators found it easier to propose unitary approaches to apportionment of costs than of profits. Companies themselves favour apportionment of joint and overhead costs, to ensure that such costs can be deducted somewhere. The BEPS proposals included adoption of a simplified method for pooling and allocating central service costs within a corporate group.[21] However, many tax administrations are reluctant to allow deductions for such charges, rightly considering that they can be used to undermine the tax base in source countries. Hence, the proposals on this point are limited to low value-adding services, and further work will be done on defining a threshold. The initial proposal envisaged that a profit element should be included, trying to uphold the fiction that this is not an apportionment method. Although this has been weakened in the final report, it still suggests a 5 per cent mark-up, as if this were a contract between independent entities.

An important departure from the independent entity principle came in the proposals on limitation of interest deductions. The initial draft suggested a limit based on apportioning the group's consolidated net costs of interest paid to third parties by the MNE as a whole, in proportion to each affiliate's earnings before interest, tax, depreciation and amortisation (EBITDA). This was explicitly presented as not an arm's length rule.[22] However, the final report recommends a fixed cap of between 10-30 per cent of EBITDA, although combined with a group ratio rule, at the taxpayer's option.

The recommendation of a one-size-fits-all fixed cap runs against all the evidence. Data put forward by business groups themselves showed that there are wide variations in the debt ratio between economic sectors and even different firms. A survey for the period 2009-2013 showed that 55-61 per cent of non-financial MNEs had interest expense below 10 per cent of EBITDA, and 78-83 per cent had a ratio below 30 per cent.[23] A fixed cap of 30 per cent is evidently far too high – yet this seems to be the option chosen by OECD states, anxious not to disadvantage their MNEs.

Strong rules on limiting interest deductions could go a long way to ending BEPS. The group ratio rule, based on an apportionment approach, would be a considerable improvement on methods still used by many, especially developing, countries, such as thin capitalisation rules. It would still involve some significant problems, especially the definition of interest. Also, the BEPS project had insufficient time to consider how to limit other types of deduction that erode the source tax base. A more comprehensive approach is suggested by Michael Durst, who has put forward a modified version of the Transactional Net Margin Method (Durst 2016), which is outlined in Chapter 3.

Ensuring taxation of a group's worldwide profits could be achieved by stronger rules on CFCs, which also would treat a corporate group as a unitary firm. This will be discussed in more detail in the next sub-section. However, the final BEPS report contains only recommendations for building blocks. It adopts a cautious approach, remaining ambivalent about whether the main aim is to preserve the tax claims of the parent's home country or those of source jurisdictions, and emphasising the need to balance ensuring taxation with preserving competitiveness. This is reflected, in particular, by the report's recommendation that CFC rules should apply only to subsidiaries that are subject to an effective tax rate 'meaningfully lower' than that in the parent's country. Unfortunately, adoption of such weak CFC rules will continue to encourage competition between countries to reduce corporate taxes, and to motivate MNEs to shift profits.

Some measures, although relatively minor, are proposed to combat exploitation of the separate entity principle by fragmenting functions and assigning them to different entities in a group. Tax advisers have for some years been devising schemes for corporate restructuring of supply chain management to reduce liability to tax and other forms of regulation. Such structures have enabled a company such as Amazon to book sales to an affiliate in Luxembourg that has paid low taxes, while separate affiliates in each country dealing with parcel delivery and customer relations declared low levels of profit attributable to those activities. Similarly, Google books its sales of advertising to an affiliate in Ireland, while it has staff employed by another subsidiary in London dealing with marketing, as well as research (Bergin 2013; Public Accounts Committee 2016).

The current rules on taxable presence require a PE, a fixed physical presence, for six or twelve months. However, the rules in the OECD model treaty exclude from that definition activities such as warehousing if they are merely preparatory or auxiliary to sales. The proposed changes would remove this exemption if they 'constitute complementary functions that are part of a cohesive business operation' carried out by the MNE through other entities in that country (OECD 2015a Action 7: 39). Yet, activities such as warehousing would still be considered to be separate from sales. Deeming that it constitutes a PE still leaves open the question of what profit should be attributable to it.[24] Contracts could continue to be booked outside the country, unless the enterprise has an entity or agent there which 'habitually plays a principal role leading to the conclusion' of the contracts (OECD 2015a Action 7: 16). It is not clear whether this would affect companies such as Google, since the marketing activities could be organised so that they do not directly involve conclusion of contracts. Indeed, this seems to have been the conclusion of the investigation of Google in the UK, which resulted in a settlement that has been sharply criticised (Public Accounts Committee 2016). Even if the sales contracts were considered to be concluded locally,[25] that activity would be regarded as separate from operating the search engine, and the activity of managing sales may be regarded as attracting low levels of profit.

The need for more radical changes

A wider approach was opened up by the work of the Task Force on the Digital Economy (TFDE) under Action 1. This could be potentially far-reaching, especially as the TFDE rightly concluded that digitalisation has affected all economic activities to different degrees, so it would be inappropriate to apply different rules to a digital sector ring-fenced from the whole economy. In particular, digitalisation is transforming many service sectors, making it even easier to shift the tax base away from the place of performance, which has long concerned developing countries. However, no conclusion was reached on Action 1, and a further five years was requested for the work of TFDE to continue. In the meantime, all countries are facing major problems posed by taxation not only of internet giants such as Google, but many MNEs, especially in key services sectors, which can use digital technologies to minimise their CIT liability.

The report on Action 1 of the BEPS project recognises that digitalisation means that MNEs have come 'closer to the economist's conception of a single firm operating in a co-ordinated fashion to maximise opportunities in a global economy' (OECD 2015a Action 1: para. 232). Furthermore, it shows that digitalisation undermines the concepts of residence and source on which traditional international tax rules are based, due to two main factors (para. 273). First, firms may make extensive sales of goods and services in a country without the need for any significant physical presence there. Professionals such as lawyers or business advisers can visit clients just for short periods while providing services for much longer, while the delivery of many goods and services can be organised through the internet, though they may be sourced or supported locally. This renders the traditional physical concept of a PE obsolete. Yet the OECD consideration in 1999-2005 of the implications of electronic commerce rejected any significant changes to the PE definition.[26]

Secondly, and more importantly, despite needing a minimal physical presence, firms can now have much closer relations with customers and users. Companies reap enormous value through the systematic collection of data about and from users. Supply relationships are no longer one-way, and users can also contribute considerable value, including content such as comments and reviews. Paradoxically, therefore, firms are more closely bound to their customers, but may not need a significant physical presence in countries where they sell.

The report identifies some far-reaching possible reforms to deal with these challenges, but which will require continuing work over the next five years. First would be a new taxable nexus based on 'significant economic presence'. This could result in a greater allocation of the taxable base to the country of sales – for example, if operating a local website were accepted as an activity taking place in the country. The implications of this are even more extensive. It would attribute profits to the entity in the country where the sales take place, although the costs may be borne mainly by affiliates located elsewhere. This makes it essential to adopt a unitary approach, or as the report says it entails a 'substantial rewrite of the rules for attribution of profits' (para. 286). The report canvasses several possibilities, including fractional apportionment, deemed profit methods, a withholding tax on digital transactions, and an equalisation levy.[27]

Digitalisation has also greatly facilitated the fragmentation and restructuring of MNE operations around global value chains, as mentioned above. This has also led to a recognition of the potential role of the Profit Split Method. Although accepted by the OECD since 1995 as within the arm's length principle, this method clearly entails apportionment of the aggregate profits of related entities. However, it is regarded by many as unsatisfactory in practice, unsurprisingly since no work has been done since 1995 to regularise and systematise the approach. Work was begun on it during the BEPS project but not completed, so the final report on the transfer pricing Actions 8-10 includes a chapter outlining the scope of further work on the Profit Split Method, which is expected to take two years. It will cover consideration of the circumstances in which the method is appropriate, specifically including the problems of developing countries in finding suitable comparables, at the request of the G20's Development Working Group. Although the Profit Split Method essentially involves an apportionment methodology, it seems that the intention is still to begin from transactions, and to limit the scope of applicability of the approach.

Attribution of profits: transfer pricing and functional analysis

The greatest reluctance to abandon the independent entity principle is seen when it comes to the allocation of profits. Three of the 15 BEPS Actions deal with transfer pricing, and the reports on these have resulted in a substantial rewriting of the *OECD Transfer Pricing Guidelines* (TPGs), extending them from around 370 to nearly 500 pages. The TPGs are important because they are applied in practice in countries around the world, and not only by OECD members.[28] Despite the extensive rewriting of the TPGs, they still stress that the starting point should be the various entities in the MNE group and the transactions between them.

There is nevertheless a significant reorientation of the rules, with a new emphasis on accurately delineating the true nature of these transactions, based on an analysis of the facts and circumstances of each business. This 'requires a broad-based understanding of the industry sector in which the MNE group operates... including its business strategies, markets, products, its supply chain, and the key functions performed, material assets used, and important risks assumed'.[29] On the basis of such an analysis, a tax authority may recharacterise, or in some circumstances even disregard, the ostensible terms of the related party transactions. Once recharacterised, the pricing of the transactions should be evaluated by applying the accepted transfer pricing methods, as far as possible by reference to suitable comparable transactions between independent firms.

The difficulties posed by this procedure should be readily apparent. Tax authorities must carry out individual audits of firms, analysing the firm's group structure and business model, which requires specialist knowledge of each industry. The F-A-R (functions-assets-risk) analysis in the revised TPGs is now elaborated in greater detail, especially as regards the functions relating to intangibles, and to risks. A key intention is to ensure that an affiliate that is used simply as a 'cash box', either for owning and receiving income from intangibles, or for group financing, should receive only a minimal return, based on the assumption that it assumes no risks.

The logic behind functional analysis is to try to identify the specific functions performed by different affiliates. In practice this is difficult or impossible when it comes to knowledge and risk, both of which are spread through the firm as a whole. This understanding flows from the basic theory of the firm, and is also borne out in practice. For example, a submission by BASF, the German-based chemicals firm, explained: 'Quality management and controls relating to the risks, functions and assets employed are to a wide extent part of corporate procedures which are generally valid group-wide and are fully integrated in the business processes. The research and development process is managed by electronic systems which track the allocation of projects to specific research centres, the adherence to budgets, the sign-off processes and the registration of IP rights. "Control" is therefore to a large extent built in to group-wide guidelines and operating systems, and can therefore be performed anywhere as such systems enable a decentralised, collaborative organisation'.[30]

Indeed, MNEs pride themselves on being both global and local, able to benefit from their coordination of activities worldwide, while their central management teams may be relatively small.

The revised TPGs place significant emphasis on control functions. In relation to intangibles, they identify the specially important functions as 'design and control', 'direction of and establishing priority', and 'management and control' (revised TPGs para. 6.56). Similarly, for identifying the location of risk the key test is the 'capability and authority to control' (para. 1.67).

This control test for the location of key functions clearly favours countries of residence. It is likely that countries where the corporate headquarters, chief financial officer, or main research centre are located will assert that the control over functions such as finance and research is exercised there, even if the firm operates in a decentralised way. Hence, an MNE could employ large numbers of people in research and development activities in affiliates around the world, which could be treated as having only routine research functions, to which relatively low profits would be attributable.[31] At the same time, the aim to end tax avoidance by attribution of profits to cash-box affiliates may have limited success. A company could relocate a few senior people to carry out control functions in a country that offers low effective tax rates for such activities. Indeed countries are already competing to attract research hubs, by offering low tax rates on structures such as the 'patent box', and trying to attract corporate headquarters and holding companies by offering generous treatment of foreign-source income.

Some revisions have also been made that could strengthen the claims of source countries when conducting this type of functional analysis. This is a response to pressure from non-OECD G20 countries, especially

China and India. These revisions deal with 'location advantages', and 'assembled workforce' (revised TPGs Chapter 1, sections D.6 and D.7). However, these provisions are worded very carefully and cautiously. It remains to be seen whether the UN *Manual on Transfer Pricing*, the 2010 version of which included discussion of these factors especially in the sections from China and India in Chapter 10, will be revised to bring it into line with the OECD TPGs.

Following the functional analysis, an appropriate price must be identified for the (recharacterised) transaction. Although the TPGs in principle state that the most appropriate method can be used, it is generally assumed that there should first be a search for suitable comparables – that is, market prices between independent entities. The normal practice is to use databases that are available commercially (though at significant cost). These usually contain data collected from filings of company accounts, so generally do not include details of transactions, only of company profits by industry sector. So although the methodology stresses the need to start from transaction prices, in practice the focus is on the level of profit.

Data from company filings is, in any case, not available for most developing countries – where there is coverage, experience shows that it is hard or impossible to identify suitable comparables. This is especially likely for small economies that may have few significant independent local firms, but transfer pricing specialists in large countries also confirm this.[32] To deal with this, specialists have developed econometric techniques to use data from elsewhere, adjusting for differences in economic conditions. However, these produce only a range of possible prices, often quite wide (Gonnet, Starkov, Pletz and Maitra 2014).

Indeed, although all the five accepted transfer price methods are described as transactional, only the Comparable Uncontrolled Price method (CUP) directly involves comparing and adjusting transaction prices. The Resale Price Method (RPM) begins from prices of sales to unrelated parties, but reduced by an appropriate gross margin to arrive at a price level used to estimate profits. The Cost Plus Method (CPM) also uses an appropriate margin, but as a mark-up on operating costs. In both cases these calculations are supposed to involve adjustments to the original transfer prices, but clearly the focus is on the profit. Two methods were added in 1995 to these traditional ones, focusing more explicitly on profit, but still described as transactional profit methods. The Transactional Net Margin Method (TNMM) is a refinement of Cost Plus, but is based on the net profit (rather than gross margin), which is calculated in relation to a suitable base, such as costs, sales or assets.

It has become increasingly clear that these methods are inadequate, because they attribute at most a routine profit to operating affiliates. They are described as one-sided methods, since they focus only on the local affiliate, and compare its profits with those of firms conducting activities that could be said to be similar. This ignores the business reality of the advantages of scale and scope, and the synergy resulting from the integrated operations of MNEs. The problem is most evident in relation to intangibles, which benefit the firm as a whole, but can be treated as assets, ownership of which can be transferred to an affiliate in a low-tax country.[33]

In response, a fifth transfer pricing method was included in the 1995 TPGs, the Profit Split Method (PSM). This explicitly abandons the focus on transaction prices since it apportions the combined profits, although only those from a series of transactions (hence it is still described as a transactional profit method, like the TNMM). The TPGs recognise the strength of this method especially in relation to 'highly integrated operations', particularly where both parties make 'unique and valuable contributions' (para. 2.109), or to achieve 'a division of the profits from economies of scale or other joint efficiencies' (para. 2.113). The PSM poses technical problems, mainly to deal with the differences between the accounts of the entities whose profits are to be combined. It also requires identification of suitable criteria or 'allocation keys' for apportioning the profits. These questions are also central to formulary apportionment. However, work on the PSM was not completed in the first phase of the BEPS project, and this is one of the key issues which remains outstanding.

This very brief account of the principles and procedures for transfer pricing audits shows their complex and technical nature. It is clearly far easier for large MNEs than for tax authorities to employ consultants skilled in these techniques. If these advisers produce suitable analyses backed by appropriate documentation, it is hard to mount a challenge to the transfer pricing arrangements they design that would be upheld by a court.[34] There is some evidence that when a country creates a specialist section and strengthens transfer pricing audits, additional tax revenue can result. It is easy to understand that companies are likely to react to the initial threat of enhanced audits by making adjustments to their accounts to pay some more tax. The question, however, is whether such gains will be sustainable.

More seriously, it is evident that the elaborate and subjective nature of the evaluations involved creates considerable potential for conflict, both between tax authorities and firms, and between different tax authorities. Concern about the likelihood of increased conflicts led to pressure to strengthen the dispute settlement procedure, as discussed at the end of the previous section. It seems far preferable to try to devise rules that would be simpler and easier to administer, than to rely on dispute resolution procedures to remedy the defects of these contentious and subjective regulations.

Conclusions on the BEPS project

Overall, the BEPS project outputs could provide stronger powers to national tax administrations. However, they also involve considerably increased complexity of the rules to be applied. They include some significant moves towards treating MNEs as unitary firms, but mainly for apportionment of costs. The allocation of profits depends on the transfer pricing rules, which still start from the independent entity principle and transactional analysis. This requires subjective and discretionary evaluations, requiring significant resources of skilled staff.

Evidently the tax experts engaged in the BEPS project could not agree on clear criteria or principles to decide how to allocate profits based on how value is created. Hence, this has been left for case-by-case determination, based on functional analysis. At the same time, this continues to incentivise MNEs to create complex structures by splitting up functions. Nevertheless this key issue will receive further attention, both in the work on the Profit Split Method and on the digitalised economy. As already mentioned, these issues involve consideration of the MNE as a unitary firm. The next chapter will outline and analyse some of the options that have been put forward for moving towards a unitary approach.

Notes

1. Argentina, Brazil, China, India, Indonesia, Saudi Arabia, South Africa and Turkey.
2. Albania, Azerbaijan, Bangladesh, Croatia, Georgia, Jamaica, Kenya, Morocco, Nigeria, Peru, Philippines, Senegal, Tunisia and Vietnam.
3. See the programme on Revenue Enhancement for Developing Economies (REDE).
4. This provision allowing formulary apportionment still remains in the article on attribution of profits to a permanent establishment (PE) in the UN model, and in many actual treaties (Avi-Yonah and Pouga Tinhaga 2014).
5. As pointed out in IMF (2014).
6. First introduced in the US by the Kennedy administration in 1962, but due to strong opposition from both US MNEs and foreign governments it was limited to CFCs with a specified level of passive income, and located in a low-tax country (Picciotto 1992). Some OECD countries later introduced similar measures, but their effect has been limited due to the conditions applied, which are also relatively easily circumvented. The UK effectively abandoned its CFC rules in 2012, adopting a territorial basis. The modest reforms recommended in the BEPS proposals are discussed below.
7. See particularly Langbein (1986), and for an account and analysis Picciotto (2013). Although unitary taxation is still regarded as anathema among many international tax practitioners, there is a broad consensus among independent academic commentators on this view; for a representative recent sample see Clausing and Avi-Yonah (2007), Vann (2010), Kleinbard (2011b), Fuest, Spengel, Finke, Heckemayer and Nusser (2013) and Devereux and Vella (2014). While these academics agree on the nature of the disease, they differ on the most appropriate cure (some of the options are discussed in Chapter 2). On the other hand, the practitioners involved in the BEPS project preferred to evade an overt diagnosis, in favour of seeking consensus on remedial treatments.
8. See Chapter 2. An important reason for the protests was that formulary apportionment taxes MNEs on a fraction of their worldwide profits; European firms setting up in California were making low returns there on their large initial investments, which they would find it hard to write off against their profits elsewhere.
9. KPMG's *Global Transfer Pricing Review*, published every two years or so, provides information on many countries; for a survey covering Latin America and the Caribbean see CIAT (2013). Accounts of the distinctive approaches of Brazil, China and India were provided in Chapter 10 of the *UN Practical Manual on Transfer Pricing* (UN 2013). Brazil's fixed margin method aims at ease of administration, but is regarded by OECD countries as diverging from their norms (see Schoueri 2015 for a discussion). China and India have applied the concept of 'location specific advantages' in ways that also have not been accepted by the OECD.

In 2013 conflicts between the competent authorities (responsible for resolving international tax disputes) of India and the US were publicised; the US official complained that his Indian counterpart approached cases from a policy perspective rather than applying the rules, and suspended negotiation of bilateral Advance Pricing Agreements (Parillo and Trivedi 2013). The Indian official was soon replaced, and the US moved to normalise relations (Parillo 2013). India's Central Board of Direct Taxes in January 2015 announced the signature of a Framework Agreement with the US, and a year later reported that over 100 out of some 200 outstanding cases had been resolved (Government Press Release, available at http://pib.nic.in/newsite/PrintRelease.aspx?relid=135867).

10. This was aimed at tax evasion by individuals behind the cloak of bank secrecy. OECD countries began a programme of negotiation of Tax Information Exchange Agreements, mainly with tax havens, and providing for supply of information on request. Critics such as the Tax Justice Network pointed to the inadequacy of this programme, and called for a comprehensive multilateral system of automatic exchange, which was eventually accepted as the goal by the G8 and G20 in 2013. The OECD established a global Common Reporting Standard, approved by the G20 in 2014.
11. Hence they establish jurisdictional rules that create what Reuven Avi-Yonah has described as the international law of tax (Avi-Yonah 2004).
12. Some commentators still continue to emphasise this perspective, e.g. Lang and Owens (2014); others argue that prevention of double taxation can adequately be ensured through domestic law, while retaining policy flexibility; the lock-in provided by tax treaties might at best be justified as a commitment device to reassure foreign investors, but the evidence on the effect of tax treaties on investment is at best mixed (Brooks and Krever 2015; and, for a case study, Hearson and Kangave 2016).
13. Indeed, structures are available that enable deduction of the same interest twice, or 'double dipping'; these techniques are not new, see Picciotto (1992) Chapter 8.3.b, especially p. 205.
14. The final BEPS Action 2 report deals with only the most egregious arrangements, yet runs to some 450 pages (150 of text and 300 of examples). It remains to be seen how many countries will follow the recommendations, and how.
15. This was seen in the discussion in the UN Tax Committee in 2014 of a proposal to include a new provision in its model treaty, along the lines of Article 23A.4 adopted by the OECD in 2010, to limit tax exemption in the country of residence if it would result in double non-taxation. The proposal was accepted only subject to inclusion in the Commentary of wording explaining the opposition of some members (UN Committee of Experts in International Tax Matters, Report on 10th Session, doc. E/2014/45-E/C.18/2014/6, paras. 57-8). This resulted from a note of objection submitted by the member from India, who argued that 'developing countries sometimes intentionally enter into treaties

including provisions that allow double non-taxation in order to secure their developmental interests' (UN document E/C.18/2014/CRP.16: 3).

16. Available at www.oecd.org/tax/beps-reports.htm.
17. For a more detailed discussion of the relationships between technicisation and complexity, see Picciotto (2015).
18. Shown in the OECD data on recourse to the mutual agreement procedure for resolving such conflicts, available at www.oecd.org/ctp/dispute/oecd-releases-2014-map-statistics.htm.
19. This has been pointed out by other commentators. For example, Prof. Michael Devereux, commenting on the aims of the BEPS Action Plan to 'better align rights to tax with economic activity', said: 'I see this as a new principle, this is saying let's tax where there is economic activity or relevant substance. I think if the OECD had gone back and said we need to review these principles and maybe replace them with a new principle which is this, I would have applauded and said this is just what we needed to do. But actually that doesn't seem to be what's happening, what actually seems to be happening is that we are keeping all the old principles and overlaying a new principle on top, which is actually inconsistent with the existing principles, and what do we end up with? Well, we end up with so many different principles we don't know whether we are coming or going.' (Presentation at the conference of the Oxford University Centre for Business Taxation on Tax Competition and BEPS, June 2014, available at www.youtube.com/watch?v=PLVTrhuQDwA&list=PLtXf43N26ZidJfK8KN-ffHkfYfFsidivv&index=1). Prof. Edward Kleinbard commented on the BEPS Project: 'I wish them the best, but I think that they've made their lives very hard for themselves by insisting on the arm's length principle as an untouchable sort of axiom' (interview for a blog on the Tax Foundation, 15 May 2015, http://taxfoundation.org/blog/making-sense-profit-shifting-edward-kleinbard).
20. Momentum for public CbCR is growing – especially in the EU, where it has been proposed as a corporate disclosure rather than as a tax measure. The strict confidentiality that has been insisted upon for these reports will also greatly hinder research both on the extent of the success of the BEPS project, and the design of improvements, as discussed in Chapter 7 below.
21. Through revisions to chapter VII of the Transfer Pricing Guidelines (TPGs), in the BEPS Report on Actions 8-10.
22. Discussion draft on Action 4, December 2014, paras. 21-24.
23. See data in the survey done by PwC for the Business and Industry Advisory Group (BIAC) of the OECD: Comments received on Public Discussion Draft BEPS Action 4: Interest Deductions and Other Financial Payments, Part 1, p.136, available at www.oecd.org/tax/public-comments-action-4-interest-deductions-other-financial-payments.htm. The analysis was of public companies in Standard & Poor's GlobalVantage database, with over 20,000 entries.

24. The proposed revision to para. 22 of the Commentary to Article 5 states: 'Where, for example, an enterprise of State R maintains in State S a very large warehouse in which a significant number of employees work for the main purpose of storing and delivering goods owned by the enterprise that the enterprise sells online to customers in State S, paragraph 4 [the exemption] will not apply to that warehouse since the storage and delivery activities that are performed through that warehouse, which represents an important asset and requires a number of employees, constitute an essential part of the enterprise's sale/distribution business and do not have, therefore, a preparatory or auxiliary character'. The issue of attribution of profits to such a PE was left for further work, which entails revisiting the so-called Authorised OECD Approach to Article 7.
25. The Google settlement was soon followed by an announcement by Facebook that from April 2016 it would begin to book some of its advertising contracts in the UK – those of large clients with account managers. However, commentators pointed out that this would not result in a major increase in the tax payable.
26. See Annex A of the BEPS Action 1 report.
27. Such a measure was introduced by India in 2016.
28. The OECD considers that its member states are committed to applying the TPGs, including revisions once adopted, and the OECD Council approved the BEPS reports presented in October 2015. In some states they are given statutory status to be used as guidance for tax treaty interpretation, e.g. the UK. Some non-OECD countries, including Nigeria and Tanzania, also have statutory provisions giving the TPGs such status, although along with the *UN Manual on Transfer Pricing* (UN 2013). Some national courts have relied on the TPGs even without statutory support: e.g. in *Unilever Kenya Ltd* (2005), Judge Alnashir Visram rejected transfer price adjustments made by the Kenya Revenue Authority on the grounds that they were contrary to the OECD Guidelines, although the Kenyan legislation at that time made no reference to them. Other countries (e.g. India, US) implement the TPGs through their own rules. Corporate tax advisers generally rely on the TPGs to justify their practices, so tax authorities generally need to do so as well. Although in most countries the taxpayer in principle has the burden of justifying its accounts, in practice if a structure and pricing scheme have been devised and documented by specialist advisers, the tax authority faces a difficult task in challenging them.
29. New para. 1.34 in Chapter 1 Section D of the TPGs.
30. In its submission to the Revised Discussion Draft on Transfer Pricing Aspects of Intangibles, September 2013, www.oecd.org/ctp/transfer-pricing/basf-intangibles.pdf.
31. BASF, in its evidence cited in the previous footnote, stated that it has 'numerous research hubs, located primarily in Germany, USA, China and India'.

32. A rare occasion when this was frankly recognised occurred during the consultations in the BEPS process on special measures (19 March 2015), when the Chinese delegate (Xiaoyue Wang, deputy director-general in the International Taxation Department) boldly stated that 'the arm's length principle does not work', because in her experience true comparables cannot be found (see www.youtube.com/watch?v=hjuhPtmTx64&feature=youtu.be).
33. The revised chapter VI of the TPGs now states that one-sided methods are generally not reliable for valuing intangibles (para. 6.142).
34. In late 2014, the US Internal Revenue Service (IRS) hired specialist consultants at a cost of $2 million to assist the IRS audit team in the examination of the transfer pricing arrangements of Microsoft (Gupta 2014). In the UK, HM Revenue and Customs (HMRC) increased its transfer pricing specialists from 65 to 81 between 2012 and 2016; its 6-year investigation of Google's tax affairs involved between 10 and 30 specialists at any one time, and eventually resulted in a settlement agreeing an additional payment of £130 million covering the period 2005-15 (£18 million for interest, and including a change in the treatment of share-based compensation: see Public Accounts Committee (2016), paras. 4-6).

Chapter 2

Unitary Alternatives and Formulary Appointment

Sol Picciotto

Summary This chapter begins by outlining several proposals that, in different ways, would apply a unitary approach to multinational enterprises (MNEs). The remainder of this chapter focuses more particularly on one variant: unitary taxation with formulary apportionment, in the light of the work presented in this collection. It first analyses the issues involved in defining the tax base to be apportioned, then evaluates the evidence about the possible effects of formulary apportionment on national tax revenue, and sketches the possibilities and prospects for adoption of such a system regionally, ending with a brief conclusion.

Options for adopting a unitary approach

The term 'unitary taxation' is often treated as synonymous with formulary apportionment, which is confusing. Several alternative approaches are available that involve treating transnational corporate groups as unitary firms. Indeed, as already discussed above, the existing rules already include unitary elements. Hence, some of these approaches could be compatible with current rules. This section will briefly outline and evaluate some of the unitary taxation methods that do not involve formulary apportionment.

Residence-based worldwide taxation (RBWT)

One is for the adoption of residence-based worldwide taxation (RBWT). This would apply home country tax directly on a current basis on the consolidated worldwide profits of a corporate group, but with a full credit for foreign taxes paid.[1] This would in effect treat all foreign affiliates on a full-inclusion basis as controlled foreign corporations (CFCs).

RBWT gives the residual right to tax to the firm's home country, but the initial right to the source country. Hence, it can be seen as strengthening source country taxation by removing the incentive for the MNE to shift profits, since any reduction of source taxation would lead to an equivalent increase of tax in the home country. It also removes the temptation for the source country to offer tax advantages to attract inward investment, for the same reason. However, this can also be seen as an infringement of source country tax rights, if those rights are understood as including a right *not* to tax. This goes to the heart of the issue of the nature of tax sovereignty raised by the aim of ending double non-taxation, discussed in Chapter 1.

Such provisions could, from a legal perspective, be formulated and implemented unilaterally, without the need for agreement between states, and probably also without alterations to tax treaty rules. Indeed, strengthening of CFC rules was Action 3 in the base erosion and profit shifting (BEPS) project but, as mentioned in the previous chapter, the final proposals were very weak. In practice, however, unilateral adoption of strong CFC rules is difficult, especially for a country with a high corporate tax rate. Since MNEs headquartered there would be subject to that high rate on their worldwide profits, it would create an incentive for them to relocate or 'invert'. This could be counteracted legally, through appropriate residence rules. However, as many have argued, corporate residence is increasingly hard to define. Place of incorporation is obviously ineffective, and place of central management may also be prone to avoidance since it involves identifying where key central management decisions are taken.

Fleming, Peroni and Shay opt for a test of shareholder residency with a 50 per cent threshold, and a rebuttable presumption for place of incorporation (Fleming et al. 2014). This is based on their view that the incidence of the tax is essentially on shareholders. They counter criticism that determining shareholder residency is impractical, by claiming that it is technologically possible and such information should be increasingly available 'in a post-FATCA world'.[2] They also argue that RBWT is superior to the formulary apportionment variety of unitary taxation, on the grounds that the latter is a territorial system, and hence would affect – they say distort – investment decisions. They concede that, unlike traditional territorial systems, formulary apportionment would not create incentives for artificial profit shifting, but argue that applying the three-factor apportionment formula based on labour, assets and sales would encourage firms to shift assets and employment to low-tax countries. This concern may weigh especially heavily for the US, where the loss of jobs due to outbound investment has left scars. This is discussed in more detail in the next section, in the context of the issues affecting the selection of formula factors in a formulary apportionment system.

Adoption by the US could be feasible as part of a wider reform of corporate taxation, including reducing its current high marginal corporate tax rate of 35 per cent. It is now widely accepted that this is an unacceptable disadvantage compared to, for example, the UK with a rate of 20 per cent (soon to be 18 per cent), or Ireland at 12.5 per cent. Recognising this, blueprints that have been put forward for reasserting US taxation on a worldwide basis have been coupled with moving to a lower tax rate, which could be politically popular. Although the BEPS proposals were formulated so as not to require significant changes to current US tax statutes, a broader US tax reform is clearly necessary to break up the logjam restricting a more effective and long-term solution. However, this depends on the US domestic political conjuncture, since it raises distributional issues of the relationship between corporate and individual taxation, and indeed about the overall level of taxation.

A shift towards RBWT would also be facilitated if a more coordinated approach could be developed, despite the failure to do so in the BEPS project. Notably, the action plan published by the European Commission in June 2015 suggested that EU member states should reform CFC rules jointly (European Commission 2015). Adoption of RBWT by both the US and the EU could make the approach effective, although there should be some coordination, which would be hard to achieve. The BRICS countries (Brazil, Russia, India, China and South Africa) are now also the home of large MNEs, and could be potential adopters of RBWT. However, in the present climate there seems little appetite for such coordination. The draft directive published by the European Commission in January 2016 as part of its anti-tax avoidance package proposed measures to apply some of the BEPS proposals. These included common CFC rules, but aimed only at defined types of passive income, and confined to entities in non-European countries with very low tax rates (a threshold of 40 per cent of the home country rate).

A destination-based corporate tax

Another approach is the concept of a Destination-based Cash Flow Tax (DBCFT). This has been advocated especially by some economists (Auerbach and Devereux 2013), although others have criticised it (Cui 2015). A pure DBCFT is not a tax on profits, but akin to a Value Added Tax (VAT), except that full and immediate deduction is allowed both of labour costs and other cash expenses including investments. Applied on a destination basis it could therefore be regarded as trade distorting, and hence conflict with world trade rules (Cui 2015).

Nevertheless, from the perspective of international tax rules this approach has the merit that it is in effect a unitary approach, since internal transfers within a corporate group are ignored, and the tax base is both defined and apportioned in terms of sales to third parties (Avi-Yonah 2015). Allocating the corporate tax base according to the location of final consumers may have economic attractions. Notably, corporations could make investment and employment decisions without being affected by the varying tax rates of the jurisdictions where the investments would be made or workers are employed. On the other hand, it raises concerns about the distributional effects on tax revenue for countries with small consumer markets.

It also raises considerable practical problems. First, it requires identification of the location of customers, which is difficult in the era of electronic commerce. However, some solutions are being developed in relation to the shift of VAT to a destination basis, by both the EU and the OECD. The report on BEPS Action 1 suggests the possibility of taxing sales transactions, enforced through intermediaries such as banks. This would require foreign firms to register and maintain identifiable accounts, payments into which would be taxed. This mechanism could be used either for a sales transaction tax, or as a withholding tax on sales credited against a corporate income tax liability.[3] A stronger objection is that a high proportion of exports consist of sales of intermediate goods to businesses, and not finished products to final consumers. This could encourage the location of assembly industries in countries with low corporate income tax (CIT) rates, to reduce the cost of inputs.

Another major problem is that, since its tax base is entirely on sales, the DBCFT brings into sharp relief the problem that taxing rights could be allocated to countries where a company has little or no physical presence. To deal with this, Devereux and de la Feria suggest a clearing house system, modelled on the one-stop-shop being trialled in the EU, to enable the VAT to move to a destination basis. This is clearly more than just a practical issue. It would entail considerable cooperation among states, in effect a joint system of collection and enforcement of corporate taxes, with a netting-out procedure, including an element for the costs of collection (Devereux and de la Feria 2014). In view of the experience to date of attempting to reach agreement between states, this seems to be an extremely ambitious undertaking.

Other alternatives

A more pragmatic way forward could be to sacrifice some purity for achieving simplicity in allocating the consolidated tax base of a unitary enterprise. This may be especially important for developing countries, which would experience considerable difficulty in applying complex methods requiring considerable skill and judgment. It is for these reasons that Brazil adopted its distinctive system based on legislatively fixed margins, which seems to have been successful – at least in ensuring ease of administration. By removing the need for subjective evaluation by tax officials, it greatly reduces administrative costs, removes the temptation for corruption, and virtually eliminates litigation. However, setting profit margins by broad industry sector is a very broad-brush approach. It has also been considered by the OECD countries as contrary to the arm's length principle, although Schoueri has put forward proposals for bringing it into line by allowing companies a genuine opportunity to propose a more appropriate margin (Schoueri 2015).

With such aims in mind, Michael Durst puts forward a proposal for a modified version of the Transactional Net Margin Method (TNMM) (Durst 2016). This would avoid the need for a detailed audit based on functional analysis and attempting to identify comparable independent firms, by simply establishing a benchmark for the local affiliate's profitability. This would require the local affiliate to earn a profit margin in proportion to that of the corporate group as a whole. The benchmark he suggests is 25 per cent of the group's earnings before tax (Durst 2016), based on experience of attempting to apply the TNMM to a wide range of distributors, manufacturers and service providers. The fraction is chosen to arrive at a profit allocation that could be acceptable to both the revenue authority and the taxpayer. It would generally prevent the very low requirements of income that under current practice tend to be ascribed to 'risk-stripped' subsidiaries in the course of BEPS planning. The suggested method would require a minimum level of income, consistent with group-wide profitability, even after payment of interest, thereby limiting base erosion through the use of related-party loans, as well as other deductions of payments to related parties. Such a provision could be applied as a 'safe harbour', although to be effective it should not be optional for taxpayers. It is evidently not a fully satisfactory or principled approach, but is put forward as a pragmatic solution, aimed mainly to provide developing countries with a method that is easy to administer and could adequately protect their tax base.

Unitary taxation with formulary apportionment

Despite the promise of a unitary approach in controlling BEPS, it is plain that countries, and international organisations advising and assisting them, would need to address a number of important and as yet unresolved technical challenges, especially if a full system of unitary taxation with formulary apportionment is to be applied effectively in the international sphere. Such a system would require: (i) combined reporting, based on a template for both worldwide consolidated accounts and country-by-country data on revenue, physical assets, employees and sales; (ii) the selection of appropriate factors for apportioning the profits; and (iii) a conflict resolution procedure. In this section and the next we will discuss the issues involved in the first two of these, drawing on and referring to the papers resulting from this research programme.

The aim of a combined report is to establish the appropriate tax base of the corporate group concerned, and provide the data necessary for apportioning that base among the relevant countries in which it has a taxable business presence. The first issue here is the delimitation of the relevant tax base, and next is the method for its definition.

The taxable nexus: unitary business or unitary enterprise?

Two approaches to this issue can be discerned (Siu, Nalukwago, Surahmak and Valadão 2014; Hellerstein 2014). The first is that of the US state system, which focuses on the business activities. This has two corollaries. It means that the income to be apportioned is only that which derives from the so-called unitary business, and also that a state may claim to tax an apportioned share of such business earned by a corporation even if it has no affiliate or branch in the state. The limitation of the tax base to the unitary business, which entails an activity-by-activity definition of the tax base, derives from US constitutional considerations. The resulting need to delineate the boundaries of what constitutes each unitary business in which the taxpayer engages has greatly complicated practice in the US.

It would seem far more promising administratively to apply formulary apportionment to the entire combined income of a commonly controlled group that performs business in the taxing state (combined income apportionment). This avoids the often tricky debates over what constitutes a unitary business, which have bedevilled the US state system. The distinction between combined income and activity-by-activity apportionment is addressed in Durst's evaluation of formulary apportionment. He argues in favour of a combined income principle, while conceding that it could not be applied under current tax treaty rules (Durst 2015a). The chapter by Sadiq supports this for the finance sector, and also discusses the ownership and control criteria for definition of the group, which may cause problems in the finance sector if they are too narrow (Sadiq 2014).

However, it would also seem necessary to treat full inclusion as a presumption, and provide tax authorities with anti-avoidance powers to exclude activities that may have been brought within a corporate group to seek a tax advantage, by 'gaming' the apportionment formulas applicable. The whole-income approach also runs counter to the principles of attribution of profits to a permanent establishment (PE) developed by OECD countries, culminating in the authorised OECD approach adopted in 2010 by a majority of OECD countries. However, this has been generally rejected by developing countries, and has so far been incorporated into only a few actual treaties. Indeed, the issue of attribution of profits to a PE has been reopened by the changes to the PE definition agreed in BEPS Action 7, and remains to be resolved in further work. These tax treaty questions are discussed in the chapter by Avi-Yonah and Pouga Tinhaga.

The enterprise whole-income approach to tax base delineation also points to the need to reconsider the current definition of PE for establishing a taxable nexus. This is clearly now urgent, and indeed has been recognised in the BEPS project in the final report under Action 1 on the tax consequences of the digital economy, discussed above. One of the options it identifies is a new criterion for taxable nexus based on significant economic presence. However, as the report points out, current rules on attribution of income would not be appropriate for a wider concept of a PE. Moving towards a modernised concept of PE for the new economy would be much easier under a unitary approach, which would either apportion joint costs proportionately against gross income, or simply apportion net income.

Calculation of the tax base: tax and accounting rules

Probably the greatest technical challenge of formulary apportionment is posed by the divergence between financial and tax accounting. A company's books and records, and the accounts based on them, are necessarily the starting point. However, as shown in the paper by Murphy and Sikka (2015), tax authorities around the world generally require financial accounts to be restated for tax purposes. As Murphy and Sikka explain, this divergence has become greater in recent years, as financial accounting standards have increasingly focused on the needs of financial markets, and hence are primarily concerned with forecasting of future cash flows. This results, notably, in asset valuations based on market prices rather than actual historical costs, and recognition of unrealised rather than received income. On the other hand, MNEs already prepare group accounts based on financial reporting standards, including criteria for defining the group based on control, and rules for consolidation. There has also been considerable international convergence of financial reporting, especially through the International Financial Reporting Standards, although Murphy and Sikka point out that some significant national differences remain, both in the formal rules and in local culture and practices. Perhaps for this reason, as they demonstrate, the Common Consolidated Corporate Tax Base (CCCTB) does not begin from the consolidated financial accounts of the relevant group of companies, but from the individual national accounts of the various affiliates of the group, which are then required to be adjusted to the tax standards stated in the CCCTB, and only then aggregated.

However, the natural starting point for an international system of combined income unitary taxation should be the group's global consolidated accounts. These would need to be converted to tax accounting standards, since few tax administrations would be willing to accept financial accounts as a tax base. Conversion to national tax accounting rules of a variety of countries would involve complications, but Michael Durst suggests that this would mainly entail an exercise of programming the accounting databases already used by MNEs (Durst 2015a). In practical terms, even with a high degree of difference among countries' tax accounting rules, available technology should permit the accomplishment of the necessary accounting conversions, especially if statutes allow taxpayers reasonable scope for approximation in converting book into taxable income.

However, it would be preferable if there could be international convergence or harmonisation of tax base definitions. The analysis of Murphy and Sikka suggests that the standards developed for the EU's CCCTB show that an acceptable consensus can relatively easily be reached on a substantial proportion of the relevant book and tax accounting standards, using a transaction-based approach to the recognition of revenue and deductible costs, and recognising only realised profits, with its associated capital maintenance concept of maintaining financial capital. Significant differences remain, of course, essentially in relation to allowances for capital expenditure and certain investments such as research and development. They suggest that these could simply be left to individual states. The corollary, they point out, is that the apportionment formula should not include assets, which in any case involve difficult valuation issues.

The choice of an apportionment formula

The basic underpinning of a unitary approach is the understanding that the profits generated by an integrated firm result from the synergy of its activities as whole. Hence, this approach does not attempt to *attribute* particular parts of the profit to specific affiliates or entities within it. Instead, the aim is to *apportion* the profits, on the basis of factors which reflect the firm's real activity in each country. This ensures a direct link between a company's actual business presence in a country and its contribution through taxes towards the collective services and infrastructure that facilitate that business.

Historically, especially in the US, state apportionment formulas have applied three factors: employee payroll costs, sales and physical assets, equally weighted under the 'Massachusetts' formula. For the CCCTB a similar three-factor formula has been proposed, but with the employee factor equally weighted between payroll costs and headcount.

It is often argued that it would be impossible to reach political agreement on the apportionment formula, and that without such agreement there would be an unacceptable level of double taxation. A second argument is that unitary taxation would not end tax competition between states, or tax planning by companies, but shift them onto new ground. However, these overlook the point that, in choosing a suitable formula, states would need to take into account interacting factors: not only the tax revenue it would produce, but also the effects on inward investment.

The formula and tax competition for investment

Countries will, of course, evaluate the likely effect on their ability to attract foreign direct investment of both the formula they apply and their corporate tax rate, and firms would obviously consider these same factors in their location decisions. Hence, a state would need to balance the effects of the formula on tax revenue with those on investment. The incentive effects on both national tax policies and corporate strategies could therefore be mutually supportive, and potentially benign. In particular, firms would have an incentive to shift labour-intensive activities away from countries that emphasise labour in the apportionment factors. As a corollary, countries would have to consider the effect of emphasising the labour factor not only on tax revenue, but also on investment. Indeed, in practice US states have perceived the inclusion of employee compensation and property factors as discouraging companies from locating employment and physical plant in their jurisdictions, and have moved towards a higher weighting for sales.

Unlike the situation under current international tax rules, these decisions would concern real and not paper activities. This has important implications. It means that this revenue-investment trade-off would create a basis for convergence or agreement between states in the choice of apportionment factors, and that this choice is not a zero-sum game. States with a labour-intensive economy would not necessarily choose a high labour weighting in the apportionment formula, for fear of driving away investment, and discouraging investment to improve productivity. Hence, even in the absence of agreement on the apportionment formula, double taxation is unlikely to result. Indeed, there is perhaps a bigger danger of double non-taxation, unless states can learn from experience and agree to coordinate.

This can be seen from the experience in the United States. There, as shown in Clausing's paper, whereas 80 per cent of states used an equal-weighted three-factor formula in 1986, this had fallen to 17 per cent by 2012 (Clausing 2014). States instead moved to increase the weight on the sales factor, with 30 per cent of states in 2012 going so far as to use a single-sales factor formula. The reasoning has been that this would encourage investment for production, and hence increase employment in the state. Clausing shows that, although increasing the sales factor may attract investment in the short run, it ceases to have a significant effect over a longer period, presumably as competitor states adopt similar policies. It will be interesting to observe whether this experience will stop, or perhaps even reverse, the trend towards the sales factor.

More serious is the trend to an overall reduction of tax revenue. Adoption of a single sales factor could mean that the tax base may be apportioned to states where the company has no taxable presence, simply exporting to independent customers. However, states have dealt with this problem in two ways, discussed by Siu *et al*. (2014). First, a state adopting the sales weighting can couple it with a 'throw-back' rule under which, if profits are not taxable in the destination state, the sales are attributed to the source state. Around half of US states which moved to a sales-only factor adopted a throw-back rule, and the proposed CCCTB also included one. Secondly, US states have adopted wider taxable presence rules, although federal legislation and court decisions require a more significant presence than simply solicitation of sales.

Adoption of a wider taxable presence standard in international tax would indeed be desirable, especially in response to the digitalisation of economic activity, as pointed out above. The taxable nexus criteria could be extended beyond the physical requirements for a PE in current tax rules, by adoption of a concept of Significant Economic Presence, as suggested in the BEPS Action 1 report. This could include, for example, selling through a website in the local language, using local agents for activities such as order fulfilment, and selling locally-sourced products or services. This should ensure that virtually all the profits of MNEs would be taxable somewhere, without extending the net too widely to include the many small and medium enterprises with foreign sales from a purely home base. Wherever they have significant sales, MNEs generally require some business presence, such as local assembly, sourcing of inputs, distribution, packaging, marketing, and other close engagement with customers.

Nevertheless, a drift toward sales-only formulas may constitute a problem under formulary apportionment, especially since much foreign investment in developing countries involves production or extraction for export without significant local sales. Nevertheless, even sales-based apportionment could provide developing countries much better revenue results than current arm's length transfer pricing rules. It should also be borne in mind that developing countries too are significant importers of goods, and especially services, from multinationals, often with little or no local value added, so that such activities contribute little or nothing to the tax base under current rules. Thus, the net effect of a sales basis for apportionment for them would depend on the balance of exports to imports by MNEs, taking account also of whether MNEs responsible for imports have a taxable presence in the country. These countries should apply the destination basis also to sales of service, provided the services supplier has a significant business presence. Developing countries have been disadvantaged by the shift towards a service economy, due to the difficulty of taxing profits of foreign service suppliers under current tax rules, even though such a claim to tax can be justified by the importance for services of close relations with clients. On the other hand, they would be justified in applying a source basis for sales of minerals and hydrocarbons, since these are anyway heavily taxed at and after processing in the countries of consumption.

Another advantage is that emphasising the sales factor removes the temptation for states to reduce corporate tax rates. As Clausing (2014) shows, US state tax rates have remained stable even as there has been a shift towards the sales factor in apportionment. Thus, any reduction in the tax base resulting from a shift towards the sales factor could be compensated for by increasing the tax rate. Finally, formulary apportionment based solely on sales by destination would be similar to the DBCFT discussed above, although it would apply to profits.

Effects of the formula on tax revenue

Probably the main political obstacle to adoption of unitary taxation is that states fear the possible effects on redistribution of the tax base. This fear is probably all the more potent because the effects are very difficult or impossible to quantify with any accuracy. Firstly, such analyses are likely to be static, since it would be hard or impossible for a model to take account of the possible dynamic effects on investment, which were discussed in the last sub-section. Secondly, there are significant problems of lack of data, especially relating to developing countries. The paper by Cobham and Loretz (2014) shows the severe limitations in this respect of the main large commercially-available dataset of corporate accounts (Orbis from Bureau van Dijk). The data is collated from filings of corporate financial accounts, so not only is there no data at all from most developing countries, Cobham and Loretz were obliged to use turnover as a proxy for the sales apportionment factor instead of sales by destination.[4] Hence, as is generally the case, quantitative findings must be used with great care, and in conjunction with qualitative analyses.

A primary consideration is the likely effect on the overall corporate tax base. Firstly, using consolidated accounts as the starting point would mean some overall reduction in the tax base, since this would allow international offsetting of losses.[5] This indeed is a significant attraction for MNEs, seen, for example, in the support from many of them for the CCCTB proposal. The paper by Cobham and Loretz (2014) estimates this reduction at 12 per cent overall, with some significant differences between countries. As they point out, international loss-offsetting would reduce the disincentive to make risky investments in new countries. The numbers should be treated with caution, particularly as they are based on financial accounts, and as discussed above the recognition of profits is very different under tax rules. Nevertheless, there would undoubtedly be such an effect.

This will, of course, be counterbalanced by the main intended effect of unitary taxation, which is to counteract the artificial attribution of profits to low-tax countries. Cobham and Loretz show that this also has a significant impact on the overall tax base, under any apportionment formula, as more profits are attributed to countries with higher tax rates. They estimate that, overall, under almost any formula there would be a slightly positive effect on overall tax revenue, cancelling out the overall reduction from international offsetting of losses. The exception is their finding that apportionment based on number of employees redistributed revenue to lower-income countries that also had lower tax rates (in their sample, in eastern Europe). This had the effect of slightly lowering overall revenue. However, this assumes that those countries would maintain the same tax preferences and rates as at present, which is unlikely to be the case. Importantly, also, their data covers countries with preferential tax regimes, such as Ireland, Luxembourg and The Netherlands, but not the outright tax havens: notably, their sample includes only 186 affiliates in Caribbean countries. The overall impact of formulary apportionment in reducing BEPS is highly likely to result in a very significant increase in the overall tax base. Although the report on BEPS Action 11 found the losses from BEPS hard to measure, it gave estimates of between 4-10 per cent of the global CIT tax base – that is, between $100 billion and $240 billion. This would generate higher overall corporate tax revenue, which could be used to reduce tax rates.

Aside from the expected and intended redistribution of artificially-booked profits, different apportionment factors would, unsurprisingly, result in some redistribution between countries. The calculations by Cobham and Loretz suggest that the physical assets factor would tend to benefit low-income countries, and the turnover factor high-income countries; in the case of employment, a factor based on number of employees would benefit low-income countries, but this would be much less on the basis of payroll costs (to the extent that data is available). This clearly supports a balanced formula using both production factors (assets and employees) and consumption factors (sales by destination), along the lines of the traditional US formula. This was adapted in the proposed CCCTB to split the employment factor 50:50 between employee numbers and payroll costs, which seems appropriate to use internationally in view of large differences in wage levels. Another means of adjusting for wage disparities is to compare payroll data using purchasing power parity.

Some suggest that the physical asset factor should be dropped, since it is now much less relevant; also, as pointed out above, it may be difficult to quantify accurately. This would suggest a two-factor formula, balancing sales by destination and employees (equally weighted by headcount and payroll costs). The argument that intangible assets should be included misunderstands the fundamental argument for a unitary approach. As already stressed, this rejects the view that profits can be attributed to particular assets or activities, but treats them as generated by the operations of the firm as a whole, and apportions them according to its real presence in each country. The high value added by, for example, research and development teams, should be reflected in the employee factor, and apportioned to where the people are physically based. Attributing the profits to the intangible assets is both inappropriate and a recipe for BEPS.

Finally, the possibility that different competitive concerns might lead countries to adopt different formulas should not be seen as a prohibitive concern. Diverging apportionment formulas should pose no greater problem for international investors than, for example, differences among countries in tax rates or in depreciation allowances, provided that the investor knows each country's formula in advance and is able to calculate its effective tax rate in each country (Durst 2015a). Today, under arm's-length pricing rules, the investor has no reliable means of predicting its effective rates. Under apportionment formulas set in advance, however, the investor will have greater certainty than is available under arm's length rules, even if different countries' formulas differ. It would nevertheless obviously be desirable if formulas could be aligned.

Could formulary apportionment be adopted regionally?

Federal or confederal states, most notably the United States, Canada and Switzerland, have been using formulary apportionment for the division of income among jurisdictions for many years (Siu *et al*. 2014). In addition, a proposal for a regional system, the CCCTB, has been under development within the European Union for over a decade. These systems, however, are limited in their effect: they govern only apportionment of income within the particular federal union, or parts of it, that have adopted them, but they do not govern apportionment of income *between* the federal unions and other tax jurisdictions around the world. Indeed, since the conflicts which arose in the 1980s over the application of formulary apportionment by US states, especially California, on a worldwide basis (Picciotto 1992), US states have been obliged to offer a 'water's edge' basis of assessment, limited to the USA. Not surprisingly, the EU's CCCTB is also scrupulous in insisting that the normal separate entity/arm's length principle should apply outside the group of states that might adopt a CCCTB. The existing regional systems, therefore, while providing important lessons concerning the best technical rules for structuring unitary tax systems, cannot be seen as providing direct models for unitary taxation either for an international tax regime, or indeed for other regions.

Several considerations suggest that regional adoptions of unitary taxation, for use within regional groups as well as between those groups and countries elsewhere in the world, may be especially useful for groups of developing countries. Firstly, because developing countries depend relatively more heavily on international corporate tax revenue than wealthier countries, developing countries have the greatest incentive to ensure that international tax rules provide effective protection against base erosion. Secondly, regional adoption can permit pooling of resources to meet the compliance and enforcement demands posed by unitary taxation, perhaps by creating centralised tax inspection resources. Thirdly, regional adoption could help to mitigate pressures of tax competition among neighbouring countries, which in the absence of a common, regional approach might tend excessively toward a sales basis for apportionment, as has occurred among the US states.

The survey in the paper by Siu *et al*. (2014) suggests that regional groupings vary widely in their approach to harmonisation of direct taxation of corporate profits. While this is not on any agenda in Latin America or Asia, the East African Community (EAC) seems to be much more willing to move in this direction. This is perhaps due to the previous regional experience of the East African Federation, which disintegrated to a great extent because of the tensions caused by the unequal benefits resulting from providing foreign-owned firms with access to the regional market. Also, unlike even the EU, direct tax harmonisation is included among the mechanisms envisaged for building the EAC. Devising a possible regional system here seems a fruitful avenue for practical investigation.

Some point to the slow progress by the EU on the CCCTB as evidence of the insuperable difficulties of adopting unitary taxation. This must be evaluated in relative terms. Even in areas that are less contentious than direct taxation, such as harmonisation of product standards and regulation of services, progress has often been slow, and marked by shifts to new approaches. In the tax field also, harmonisation of the Value Added Tax, accepted as necessary for a single market, has been fraught with difficulties, and is only now moving to a destination basis, finally accepted as more suitable for an integrated market. In this perspective the CCCTB can be said to have made remarkable progress, especially since the fiscal crisis. Indeed, following completion of the OECD's BEPS project, the Action Plan published by the European Commission in June 2015 once again identifies the CCCTB as the only holistic solution, and proposes a relaunching of the proposal. It also envisages parallel work on joint implementation of the BEPS project proposals, significantly including the possibility of common CFC rules.[6] This would be important, since the tax base to be apportioned internally among participants in a CCCTB would be defined by application of its external international tax rules.

Hence, progress on the CCCTB and on BEPS are not opposed, but complementary. Some may indeed argue that a CCCTB is insufficiently ambitious, and that a truly integrated regional grouping (probably consisting only of core EU states) should move to a single corporate income tax. Here we have confined ourselves to examining the experience of existing systems, and the proposals that have emerged from such experiences.

Conclusions

Unitary taxation with formulary apportionment is clearly not a panacea. It certainly entails technical challenges and faces political difficulties. Our claim is simply that adoption of this approach is the only way to establish an effective internationally-coordinated system for taxation of MNEs. We have outlined above the flaws that lead to the dysfunctionality of the present system, and the reasons for thinking that a unitary approach would be superior. It is surprising that despite widespread support for these views, there has been very little serious research on the issue: to the contrary, even suggestions that it should be seriously studied have met with hostility. We hope that the projects in this programme have begun to fill this gap, and may persuade both policymakers and researchers of the need for more serious evaluation of alternatives to the long-troubled arm's length paradigm.

Such research should, of course, be practically grounded, and run alongside the reform efforts stimulated by the BEPS project, as well as debates about other alternatives that are also based on the unitary principle (discussed above). Of these, we see an overlap and interaction between RBWT and formulary apportionment, despite the assertion by some proponents of the former that they are opposed, since they castigate formulary apportionment as a territorial system. RBWT would perhaps require less technical preparation, since it could build on existing concepts in CFC regimes or national consolidation regimes. However, the key factors now seem to be political. Although RBWT would seem easier to introduce unilaterally, in practice any country seriously considering the option would be placed under great pressure by threats of corporate relocations or inversions. Such threats could be deflected by strong anti-inversion rules, preferably accompanied by concerted action. Such coordination might be possible especially between the US and the EU, which might consider common full-inclusion CFC rules in conjunction with the introduction of a CCCTB. However, this is speculative.

Developing countries will need substantial guidance in developing adequately functioning systems to replace their current regimes. Intergovernmental organisations with the necessary resources should strongly consider initiating a serious, extended and open-minded exploration of the technical challenges of implementing systems of unitary taxation based on formulary apportionment, perhaps initially among regional groups of developing countries that see a particularly strong need to protect their corporate tax bases for the foreseeable future.

Serious efforts towards the implementation of formulary rules should nevertheless be paralleled by the introduction, particularly in developing countries, of more limited measures to inhibit base erosion, such as some of the measures recommended by the OECD's work on BEPS. Historical experience, however, suggests a substantial likelihood that measures short of formulary apportionment will fail over time to curtail base erosion effectively. These countries should carefully consider the possibility that a formulary approach can provide protection to fiscal systems that cannot be achieved by other available means. What is needed is a comprehensive, open-minded and expert review of the potential that explicitly formulary rules might contribute to a sound system of international taxation, especially for the benefit of developing countries that must continue to rely relatively heavily on revenue from corporate taxation.

Finally, we should remember that, as important as reform of international taxation may be, such reforms have much wider ramifications. The tax avoidance techniques generated by the flaws in the system as it developed historically have been major factors in the creation of the offshore system of tax havens and secrecy jurisdictions.

Although its use by MNEs appears for the most part to be legal, the same techniques and facilities have come to be used or abused for a wider variety of much more dubious, illegal and dangerous practices. These range from avoidance of other types of regulation, from shipping safety standards and banking regulation to facilitation of money laundering and terrorist financing. Removing the incentives for our largest and most important corporations to use plainly illogical tax avoidance arrangements would be an enormous step towards restoring integrity to the international system for regulating trade and investment.

Notes

1. This has been advocated by a number of US-based commentators, see especially Kleinbard (2011a), Kadet (2013), Fleming, Peroni and Shay (2014) and Avi-Yonah (2016).
2. FATCA refers to the US Foreign Account Tax Compliance Act 2010, which requires US taxpayers to report any foreign bank accounts, and foreign financial institutions doing business in the US to report accounts held by taxpayers or foreign entities in which US taxpayers hold a substantial ownership interest. The BEPS Action 3 report on CFC rules discusses how to define a CFC, suggesting a combination of legal and economic control tests; but it does not address the question of how to define the ultimate parent.
3. For a contrary view, see Cui (2015) (who, however, does not seem to have taken account of these proposals).
4. The same problem was faced by the illustrative calculations attempted by the IMF (IMF 2014); the text emphasises the big difference in the redistributional effects if payroll costs are used as against headcount for the labour factor, but perhaps even more significant is the redistribution away from 'conduit' countries under any apportionment formula.
5. Under the independent entity principle losses incurred by one affiliate, for example in the early years of a green-field investment, could not normally be off-set against profits in another jurisdiction.
6. A proposed Anti-Tax-Avoidance Directive was published on 28 January 2016 (COM(2016) 26 final). However, as mentioned in above, its proposed CFC rules are very weak.

Chapter 3

A Practical Approach to a Transition to Formulary Apportionment[1]

Michael C. Durst

Introduction

A formulary system divides some of the income of a business group among tax jurisdictions according to the relative volume of the group's observable income-producing activities within those jurisdictions. Under formulary apportionment the income of a group is measured on an aggregate international basis, and is then divided among the different group members according to measures of their relative levels of economic activity, such as perhaps their relative level of sales. The formulary approach would substitute for the current practice of attempting to measure each entity's income on a separate accounting, or arm's length, basis, an exercise which requires attempts to estimate arm's length prices for the many transactions that typically occur among the different members of contemporary multinational groups.

The formulary principle may be implemented in many different ways. Versions of it are employed to allocate taxing rights over companies between the states of the United States and the provinces of Canada (see Chapter 10). Any variant of formulary apportionment involves a degree of arbitrariness in the allocation of corporate income between the company and the tax collectors, and between different taxing jurisdictions. The core reason for considering a formulary approach is prevention of tax avoidance. Currently the complexity of arm's length pricing has permitted many multinational groups to shift substantial amounts of taxable income, through what the Organisation for Economic Co-operation and Development (OECD) has labelled base erosion and profit shifting (BEPS), to zero- and low-tax countries where the multinationals conduct few if any business activities. Under a formulary system this would not be possible, as income could be apportioned only according to real and observable economic activities.

Apart from considerations of tax avoidance, a formulary system could remove a good deal of subjectivity from the workings of the international tax rules, thereby providing greater economic certainty to taxpayers and governments. Under the arm's length transfer pricing rules now in use around the world, income is apportioned according to multinational groups' own estimates – which are subject to review upon examination by tax authorities – of the levels of income that would be earned by the different affiliates of commonly-controlled business groups if those affiliates were not commonly controlled, but instead operated in the manner of independent companies transacting with one another at arm's length. In practice, under arm's length transfer pricing rules groups estimate the proper division of income among their affiliates based on often-elaborate analyses by professional economists, according to the economists' perceptions of the different income-producing activities performed, assets owned, and business risks borne by the groups' affiliates in the countries in which the affiliates operate.

For about 40 years, critics of the arm's length approach have argued that it allows multinational taxpayers excessive flexibility to use networks of contracts made among group members to shift income from countries in which the groups conduct the bulk of their business activities to other affiliates established in zero- or low-tax countries, which often have few employees or sales, and little, if any, plant and equipment. The contracts used to effect these shifts of income include licences for the use of intellectual property held by the zero- or low-tax affiliates, agreements for the lending of money, and various kinds of arrangements under which the low- or zero-tax affiliates are treated as bearing, in return for payment, group-wide business risks such as the risk of holding inventory located around the world.

I have previously published a multi-part analysis of the potential promises and limitations of the formulary system.[2] As I was conducting my study, the OECD, in coordination with the G20 group of countries, was beginning its extended and still ongoing study of BEPS, the shifting of income by multinational companies to zero- and low-tax countries. The G20 leaders gave a political impetus to the work of the OECD in apparent response to a series of studies by non-governmental organisations (NGOs), and reports in newspapers and other media, that claimed income shifting had achieved very large proportions, and that substantial amounts of corporate tax revenue were apparently being removed annually from the tax jurisdiction of countries around the world in which multinational groups actually earn their incomes.

Base erosion and profit shifting removes corporate tax revenue from countries at all levels of economic development. The media reports that seem most directly to have triggered the OECD BEPS study focused on the transfer of revenue from Western European countries, and particularly the United Kingdom.[3] Nevertheless, as several reports by NGOs have suggested,[4] the practical consequences of base erosion seem to be greatest for the lower-income developing countries. The wealthier countries of the world typically can collect government revenue relatively efficiently from domestic sources, like personal income taxes and consumption taxes. The domestic economies of lower-income developing countries, however, often contain large informal sectors in which business is conducted at a very small scale with minimal books and records maintained. The lower-income countries therefore have a relatively greater financial stake than wealthier countries in successful action to control BEPS, at least until such time as they can better develop their domestic tax base.

Recognising the special importance to developing countries of efforts to control base erosion, in July and August 2014 the OECD issued a two-part *Report to G20 Development Working Group on the Impact of BEPS in Low Income Countries* (OECD 2014a, 2014b). The IMF, building on the OECD BEPS effort, also released a study on the same topic, which the IMF describes as 'tax spillovers' of international tax rules as they affect developing countries (IMF 2014). The OECD and IMF reports provide a useful framework for considering both the potential benefits and limitations of formulary apportionment as a point of reference for designing international tax policies for the benefit of lower-income developing countries.

This chapter first introduces the issue, and summarises the potential benefits of and obstacles to formulary apportionment as a viable tax policy instrument for developing countries; it then considers possible alternatives to the current dominant methods for allocating the income of multinationals. The final section puts forward a practical proposal for a modified version of the Transactional Net Margin Method (TNMM), which could provide a simpler methodology than the full-blown transactional analysis required by the OECD *Transfer Pricing Guidelines*, and could be especially suitable for developing countries.

The OECD and IMF analyses

Perhaps the most striking element of the OECD's work on BEPS is the manner in which it articulates the root of the problem: the extent to which current tax laws permit members of multinational corporate groups to assign income to zero- or low-tax countries in which they conduct few if any business activities. In the words of an OECD report on BEPS and developing countries, base erosion results from 'arrangements that achieve no or low taxation by shifting profits away from the jurisdictions where the activities creating those profits take place' (OECD 2014a: 8). The key to curtailing BEPS, therefore, in the words of another recent report from the G20 Group, is 'to put an end to the divorce between the location of profits and the location of real activities' (G20 2013: 4).

The language used by the OECD and G20 to describe the source of the BEPS problem evokes the central principle of formulary apportionment: income should be attributed for tax purposes to the locations where business activities are performed. Because formulary apportionment can apportion income only to places where real business activity takes place, and in quantitative proportion to the extent of that activity, formulary apportionment would, if applied to a taxpayer's income from all sources, eliminate BEPS completely. That is, under a fully-implemented formulary system, income could not simply be apportioned to countries where little, if any, economic activity is performed. At least in theory, therefore, formulary apportionment represents the most straightforward remedy for the BEPS problem.

The articulation by the OECD and G20 of the principle that the geographic distribution of taxable income should correspond to the locations of a taxpayer's activities helps to move the policy debate away from what, historically, has been a rather pointless ideological debate between proponents of arm's length and formulary approaches. In light of the OECD/G20 analysis, there is no reason to think that the arm's-length and formulary approaches to the international division of taxable income rest on incompatible conceptual grounds.

The idea that the apportionment of income should follow the geographic locations of a taxpayer's activities can indeed be seen as an apt statement of the arm's length principle, if the heart of that principle is seen as a rule of tax neutrality between the members of commonly-controlled corporate groups, and independent companies that must transact with one another at arm's length. Under long-standing principles of nexus in international tax law, legal entities are subject to tax in those jurisdictions where they are physically present and conduct their activities. It is impossible under this principle for a single independent legal entity to arrange for its income to be subject to tax in countries other than those where income-generating activities occur. This result can be achieved only by members of commonly-controlled corporate groups through the use of the kind of related-party contracts that stand at the heart of income-shifting transactions.

In short, by recommending an international tax system in which income is apportioned according to the geographic distribution of a taxpayer's business activities, the OECD is seeking to move international tax laws into greater conformity with the arm's length standard. Moreover, at least in theory (an important caveat), formulary apportionment appears to offer a straightforward means of implementing the system the OECD wishes to bring about.

Despite the conceptual appeal of formulary apportionment in addressing BEPS, both the OECD and International Monetary Fund (IMF) have ruled out devoting substantial resources in the short term to an analysis of formulary apportionment as a replacement for the arm's length principle. Both organisations attribute this decision to the presence of unanswered questions about the administrative feasibility of international formulary apportionment, as well as a formulary system's possible adverse effects on the share of the global tax base apportioned to developing countries.

The OECD explains its conclusion as follows: '[A]doption of alternative transfer pricing methods like formulary apportionment would require development of a consensus on a number of key issues (which countries do not believe to be attainable in the short or medium term) and could also raise systemic problems which could result in even more damaging problems for countries' revenues. Accordingly, it is believed that it will be most productive to focus on addressing specific issues arising under the current arm's length system at the present time' (OECD 2014c).

The IMF, for its part, explains: 'Whatever its merits in principle, prospects for adoption of international [formulary apportionment] seem remote. A substantial legal and institutional infrastructure has been built around current arrangements, so that movement towards international [formulary apportionment] would likely involve considerable disruption. That might change if a major capital exporter were to move in that direction. But there is little immediate sign of that – with significant resistance within the EU, for instance, to the CCCTB [a pending European Union proposal for formulary apportionment to be applied regionally]' (IMF 2014: 41).

Rather than suggesting a formulary approach to combat BEPS, both the OECD and IMF recommend a combination of targeted anti-tax-avoidance measures that would involve, among other items:

- some modification of current arm's length transfer pricing rules;
- tightened rules to disallow deduction of interest expenses, especially when paid to related parties; and
- strengthened controlled foreign corporation (CFC) rules, by which the home countries of multinational groups limit the amount of income that the groups are permitted to accumulate through their global operations in zero- or low-tax subsidiaries.

In addition, the IMF notes that some elements of formulary apportionment might prove useful in efforts to modify current arm's length pricing rules, with the particular goal of simplifying their application in the developing country setting. In particular, the IMF suggests that some kinds of hybrid transfer pricing methods, perhaps including 'formulary profit split' methods, might be of practical benefit to developing countries (IMF 2014: 41-42).

In my view, the OECD and IMF are prudent in refraining, at least at present, from encouraging substantial efforts to design and implement full-fledged formulary apportionment rules. As explored in my recently-published analysis (Durst 2015b), significant technical and policy issues must be resolved before formulary apportionment can be implemented for international use. These questions cannot be resolved within the time frame in which BEPS should be curtailed, so focusing on other possible means of curtailing BEPS in the short term seems sensible.

Moreover, in addition to technical problems, international formulary apportionment faces a large political obstacle. For years, business groups and legislators around the world have strenuously opposed replacing current transfer pricing rules with a formulary system, and there is no indication that this opposition is weakening. The political unpopularity of formulary apportionment probably arises at least in part from its most important potential benefit: a complete elimination of opportunities for BEPS. Businesses have a direct financial interest in discouraging formulary apportionment and in channelling political debate instead towards partial measures that, unlike formulary apportionment, can form the basis of political compromise. Similarly, legislators – who have often displayed ambivalent attitudes towards corporate income taxation, especially in the international sphere – are likely to be more comfortable debating partial measures than the all-or-nothing remedy for BEPS that formulary apportionment represents. This tendency may well be present not only among legislators and other policymakers in the wealthier countries that are home to most of the multinationals that would see their tax burdens increase if BEPS were to be eliminated. In addition, legislators and other policymakers in developing countries may be reluctant to entertain reforms that would entirely eliminate BEPS, out of fear that doing so could increase the after-tax costs of international business generally, and discourage inbound investment to their country. In short, whatever its technical promise or limitations, international formulary apportionment, in part because of its potentially high degree of effectiveness in eliminating profit shifting, is a hard political sell in developing countries, as well as the wealthier countries in which multinational groups tend to be based.

This situation could change over the long or even medium term. It is possible, for example, that some developing countries will perceive their need for additional corporate tax revenue to justify assembling a coalition to develop and adopt a formulary system. It is also possible that trends in tax reform around the world will lead to a global system in which statutory tax rates are significantly reduced and BEPS is no longer permitted to a significant extent, perhaps through global adoption of strengthened CFC rules. In that situation governments and businesses might both find formulary apportionment attractive for its predictability and administrative advantages. However neither of these situations appears likely to materialise in the immediate future.

Currently, therefore, the most useful application of technical insight into formulary apportionment, particularly from the standpoint of developing countries with their disproportionate dependence on corporate tax revenue, is to look for ideas that might be useful in designing incremental measures against base erosion, including hybrid transfer pricing methods as suggested by the IMF. The remainder of this chapter seeks to promote this goal, first by summarising the primary conclusions concerning the promise and limitations of a formulary approach from my recently-published analysis, and then by suggesting an alternative method that could be introduced in the short term, especially by developing countries.

Perceived technical barriers to formulary apportionment

Historically debates over the feasibility of international formulary apportionment have focused primarily on four topics:

- the possibility that it would lead to double taxation, especially if different countries adopt inconsistent formulas;
- difficulties associated with the sales factor in apportionment formulas, including both difficulties of tracking sales made in electronic commerce, and possible unfavourable treatment of developing countries if a formula weights the sales factor especially heavily as has occurred in apportionment among US states;
- the perceived incompatibility of formulary apportionment with some elements of bilateral tax treaties; and
- the arguable need for countries to adopt a common tax base to which countries' apportionment formulas would be applied.

Concerns regarding double taxation

Opponents of formulary apportionment have often raised the concern that different countries would adopt differing apportionment formulas, just as the different US states have adopted a variety of different apportionment formulas for the purpose of domestic income apportionment within the US. This, critics contend, would cause double taxation and raise a barrier to cross-border investment.

Based on my recently-completed research, however, I am convinced – perhaps counter-intuitively – that replacing arm's length transfer pricing rules with formulary apportionment would, in fact, reduce instances of economically-damaging double taxation, even if different countries adopt inconsistent apportionment formulas.[5] This is because under current arm's length transfer pricing rules double taxation is unpredictable. Given the subjectivity of the current rules, tax authorities from two different countries often make overlapping claims to tax income from a taxpayer's cross-border investment, so that the taxpayer will end up paying total tax at an unexpectedly high overall effective rate. Moreover, at the time a taxpayer must decide whether to make a particular cross-border investment, the taxpayer generally has no way of predicting the extent to which the tax authorities will make overlapping claims – a fact that infuses these decisions with additional risk.

A taxpayer facing the risk of what might turn out to be unacceptable levels of taxation will be less likely to make an investment than a taxpayer that is better able to predict the total effective rate at which the investment will be taxed. Currently, therefore, the unpredictability of the application in practice of today's arm's length transfer pricing rules may significantly inhibit international investment.[6]

Under a formulary system, even if the two countries in which a taxpayer is considering investing apply inconsistent formulas, the investor generally will be able to predict, in advance of the investment decision, the effective rates at which each country will impose its tax. If the total effective rate is acceptable, the investor will proceed with the investment; if it is not, the taxpayer might seek more tax-friendly countries in which to invest. Most of the uncertainty generated by the arm's length system will, however, be removed – a factor that should encourage cross-border investment generally. It should also be borne in mind that countries would have strong incentives to adapt their rules, especially the formula, to encourage rather than deter such investment.

In short, it is not double taxation per se that raises barriers to international investment, but rather *unpredictable* double taxation. Formulary apportionment affords taxpayers greater certainty about the total effective tax rate than is available under arm's length transfer pricing rules. Accordingly, and perhaps surprisingly, formulary apportionment is better suited to addressing economic damage from double taxation than arm's length transfer pricing rules.

Problems with the sales factor

Over the past several decades US states have increasingly adopted single-factor apportionment formulas based on the destination of sales.[7] The apparent reason for this movement has been tax competition. State governments have been concerned that apportioning income in part on other measures of economic activity, such as payroll or location of physical plant, discourages investment in employment or construction in the state. There is every reason to expect that under an international formulary apportionment system national governments would gravitate towards a sales-only apportionment formula, as the US states have done. This prospect raises two different concerns:

- In an era of digital commerce, it may be difficult to identify the destination of sales of various goods and services with sufficient reliability to support sales-based apportionment.
- Sales-based apportionment might generate undesirable results for some countries, especially developing countries in which much income is generated by capital- or labour-intensive activities, ranging from mineral extraction to providing outsourced business services.

The difficulty of determining the destination of sales in today's digitalised marketplace arises under both arm's length and formulary systems. Both systems require determining the locations in which goods and services are ultimately consumed or otherwise used. Challenges arise mainly from three sources: (i) problems in tracing the identity of customers in electronic commerce; (ii) current permanent establishment rules, which generally do not treat the mere destination of sales as a basis for taxable nexus; and (iii) the ease with which taxpayers can route sales destined for high-tax countries through intermediaries in zero- or low-tax countries, thereby obscuring the locations in which products or services are actually consumed or used. The potential remedies for these difficulties generally are the same under both arm's length and formulary systems. They are: (i) modifying nexus rules to allow sales-destination countries to assert claims to income arising from the sales; and (ii) evidentiary tests to reduce revenue losses from excessive attribution of sales to intermediaries in zero- or low-tax jurisdictions.

In the final instalment of my recently-completed study of formulary apportionment (Durst 2014a), I suggest an approach that might be used under formulary apportionment to address the problem of sales through zero- and low-tax intermediaries. Essentially the suggestion is that tax authorities generally accept without detailed examination attribution of sales to most jurisdictions, but where sales are attributed to zero- or low-tax countries taxpayers would be required to present clear evidence that the goods and services sold were actually used or consumed in those countries. This proposed solution is certainly not perfect. It could, however, lead to a tolerable level of compliance under a formulary system; indeed it might lead to fewer difficulties with respect to intermediary sales under a formulary system than currently are posed under arm's length rules.

The additional concern, that apportionment based heavily on a sales factor might inappropriately reduce developing countries' share of the global tax base, is important to consider. The operations of multinational businesses in developing countries tend to focus especially heavily on large inputs of plant and equipment as in mineral extraction, or high personnel inputs as in the provision of outsourced services. Often, moreover, products manufactured in developing countries are exported, so they do not generate sales in the country for purposes of formulary apportionment. Other things being equal, therefore, apportionment based only or primarily on sales would appear to reduce developing countries' share of the global tax pie.

The concern that sales-based apportionment will operate adversely with respect to developing countries, however, rests on the implicit assumption that countries' tax rates must remain fixed at their current levels. If tax rates are held fixed, then an apportionment formula based only on sales would indeed be likely to generate lower tax revenue for many developing countries than a formula including as a factor either the value of physical plant or an indicator of local employment, or perhaps both. A country is not, however, required to maintain its tax rates at a constant level, so a country that stands to lose revenue as a result of a move to sales-based apportionment could make up the shortfall by increasing its rates.

Arguably, to apportion a corporate income tax on sales would cause the tax to resemble more closely a consumption tax, and therefore could place the economic burden of the tax more heavily on consumers than a corporate tax apportioned according to other factors. Although determining the ultimate incidence of different forms of tax raises complex questions, this concern may be valid. It should be borne in mind, however, that developing countries have a pressing need for more revenue than they are currently collecting; to the extent the needed revenue cannot be raised from corporate income tax, it will need to be raised from other sources, unavoidably including consumption taxes. Therefore if sales-based apportionment constitutes the only realistic means of collecting higher corporate tax revenue, a move to sales-based apportionment may represent the most consumer-friendly policy despite the likelihood that some of the tax's incidence will fall on consumers.

Tax treaty issues

If formulary apportionment is to be implementable without the need for prohibitively complex accounting segmentations among taxpayers' different activities, individual national tax authorities should be permitted to apply their apportionment formulas to a comprehensive measure of the global combined income of each multinational group that has a member subject to tax within the country.[8] The alternative would be to follow the practice that has arisen in the US, where nexus rules based on the US Constitution permit states to apply their apportionment formulas to only a portion of the taxpayer's nationwide combined income, namely the portion that arises from those particular business lines that have factual nexus with the particular state.[9] For similar reasons investment income is not included in the combined income subject to apportionment, but is instead allocated to the taxpayer's home jurisdiction. The result is that formulary apportionment in the US often becomes embroiled in disruptive controversy concerning, for example, the boundaries of the particular unitary business that has nexus with a particular state, or the distinction between business and investment income. I conclude that countries adopting formulary apportionment would be well-advised to apply their formulas to all of a taxpayer's global income, from all sources.

This conclusion, however, raises difficulty under typical income tax treaties. They generally entitle countries to assert tax jurisdiction on legal entities operating within the country only with respect to income attributable to the entity's permanent establishment (PE) within the country, generally interpreted to mean a physical presence. This limitation might reasonably be interpreted as requiring that international formulary apportionment be limited by nexus rules similar to those that have been problematic in the US.

A related concern is that income tax treaties typically contain language suggesting that income must be apportioned among related legal entities as if they were independent parties transacting with one another at arm's length. It can reasonably be argued that apportioning a group's global combined income according to a formula would not meet this standard.

Accordingly, for formulary apportionment to be implemented efficiently on the basis of taxpayers' global combined income, international tax treaties may need to be modified or governments may need to be willing selectively to override the relevant provisions of their current tax treaties. Neither of these outcomes is likely unless strong global political support arises for formulary apportionment, and this seems unlikely in the near future. Therefore the provisions of current income tax treaties may add significantly to the barriers facing the adoption of international formulary apportionment, at least until current political alignments with respect to international taxation change markedly.

Accounting barriers to formulary apportionment

Formulary apportionment will place large and novel accounting demands on corporate taxpayers, as well as on the agencies that must audit their tax returns. These demands arise largely from the fact that each country has unique rules for translating taxpayers' 'book' (i.e. financial statement) income into taxable income.[10] To determine a taxpayer's local taxable income, a national tax authority will need a measure of the taxpayer's global income – the income earned by the taxpayer from all sources around the world – that has been translated into taxable income according to the locally-applicable tax accounting rules. For example, if a taxpayer conducts business in ten different countries, and all of those countries have adopted formulary apportionment, the taxpayer might need to make ten separate translations of its global book income into taxable income under the different tax accounting rules of all ten countries.

This task is complicated by the fact that translating book into taxable income typically requires a detailed transaction-by-transaction look at the taxpayer's activities, since tax accounting rules are often activity-specific (e.g. requiring acceleration of income for long-term construction contracts, or mark-to-market accounting for some holdings of investment instruments).

The need for multiple book-to-tax translations might not be as prohibitive a barrier to formulary apportionment as it might initially appear to be. Multinational groups almost certainly already collect all the information necessary to accomplish the translations in their accounting databases; gearing up to conduct the translations, therefore, might amount primarily to an exercise in computer programming, albeit an expensive one. Although categorising some transactions under the applicable rules will require human judgement, the translation process should remain primarily electronic, and over time companies would likely learn to accomplish the task reasonably smoothly. After companies surmount the learning curve, the cost of the accounting needed for formulary apportionment might end up being less than is now required to implement, document and defend a group's transfer pricing under arm's length rules.

For the new accounting practices required for formulary apportionment to be developed, however, companies will need to commit willingly to the necessary work. A less-than-full commitment is likely to cause endless breakdowns in the accounting system, and delays in successful implementation of the formulary system. Accordingly, the adoption of formulary apportionment on a widespread basis will probably need to wait until much greater support develops for it among business leaders.

An alternative means of dealing with the complexities of book-to-tax translations under formulary apportionment would be for the countries of the world to adopt a largely uniform tax base. Taxpayers doing business in multiple countries then generally would need to convert their combined global book income into taxable income only once, just as is required today in each country under arm's length transfer pricing rules. Countries might even, in connection with the adoption of formulary apportionment, take the step of adopting book-tax conformity – conforming their tax accounting rules to financial accounting rules – thereby achieving many simplifications to their tax systems, in addition to smoothing the route to formulary apportionment.[11]

Substantially greater uniformity among countries' tax accounting systems – even to the point of book-tax conformity – seems politically unlikely, unless a great deal of support arises around the world for a formulary apportionment regime. The many differences among contemporary tax accounting regimes have tended to arise from local political considerations, and might be politically quite difficult to modify. Moreover trying to establish a global norm for tax accounting might be perceived by some countries' governments as infringing on their flexibility in lawmaking, and even on national sovereignty.

In sum, of the major concerns typically raised against formulary apportionment, the need to simplify translations of book into tax income constitutes the largest practical impediment. The political will necessary to overcome this obstacle is not evident today, so the sensible course of action, as the OECD and IMF have advised, is to defer attempts to implement full-scale formulary apportionment, and instead to draw on various potential remedies for BEPS, some of which are derived from principles of formulary apportionment, in order to assist countries in controlling base erosion within the overall framework of existing transfer pricing rules.

Hybrid transfer pricing methods

The Profit Split Method

The high priority, especially for developing countries, is to try to identify a method for allocating profits that is both relatively simple to administer and capable of producing economically-realistic results.

Of the transfer pricing methods currently in use around the world, the most obvious candidate is the Profit Split Method, under which income from a particular economic activity of a multinational group is divided among group members according to their relative contribution to the group's activity. More frequent use of Profit Split Methods might benefit developing countries, allowing them both to avoid searches for comparables and to establish the case for greater margins being attributed to operations in their countries, thereby reducing revenue losses from profit shifting.

A number of different kinds of Profit Split Method are currently used around the world.[12] The type of profit split likely to be most useful to developing countries is the overall profit split, sometimes called the contribution-analysis profit split, in which profits are divided in a one-step process among participants based on their relative contributions. This contrasts with the residual profit split, in which as a first step TNMM returns are assigned to participants' perceived routine activities, and then the remaining profit is divided based on relative contributions. The residual approach involves relying to some extent on comparables data, and also involves the difficult task of separating group members' activities into routine and non-routine components. An overall profit split, on the other hand, does not require identifying comparables, nor does it require trying to distinguish between routine and non-routine activities.

For overall profit splits to serve as the workhorse of developing country transfer pricing regimes, however, it will be necessary to solve two important problems that historically have hampered the application of profit splits. First, the *OECD Guidelines*, perhaps seeking to avoid the perception of endorsing a formulary approach, state strongly that profit splits must be designed on a case-by-case basis, according to a detailed economic analysis of each taxpayer's facts and circumstances. Although perhaps appealing in theory, this individualised approach lends substantial subjectivity and unpredictability to the design of profit splits, and also requires expenditure of time and resources, by taxpayers and tax administrations alike, which are disproportionate to any degree of persuasiveness actually added to the method by the extended economic analysis. This difficulty is likely to be especially severe in the resource-limited context of developing country tax administration. As a practical matter, if the Profit Split Method is to be used reasonably efficiently by developing country tax administrations, some level of uniformity will need to be tolerated in the application of the method to different taxpayers operating in the same industry.

In addition, for profit splits to be effective in controlling base erosion, they will need to apportion income to different parties – not according to the parties' mere levels of expenditure in supporting the group's income-producing activities, but instead according to the business activities actually performed by the parties. In practice many profit splits have apportioned income according to the parties' mere expenditure of cash, and therefore have contributed to the proliferation of BEPS transactions. It will be necessary to change this practice if profit splits are to be useful as a tool against BEPS – but the change will be perceived as a substantial one, and is bound to elicit political opposition.

The Transactional Net Margin Method (TNMM) and international tax planning

Currently transfer pricing practice around the world depends heavily on the OECD's TNMM, generally referred to as the comparable profits method under US practice. In a TNMM analysis, the net income of a taxpayer affiliate in a particular country is supposed to be benchmarked against that of comparable companies that are not themselves part of multinational groups, operating in the same markets.

TNMM, as contained in the *OECD Guidelines*, is based on comparables. Consider, for example, a distribution subsidiary that a multinational beverages group might establish in Country A. The subsidiary might report on its Country A tax return that it has earned a net operating margin (ratio of operating income to sales) during the taxable year of 3.5 per cent. The subsidiary is supposed to have reviewed these results by reference to the results of comparable distributors of similar products in Country A that are not members of multinational groups. The tax authority is then entitled under TNMM to review the taxpayer's determination by conducting the authority's own analysis of available data from comparables; if the taxpayer's reported income is materially lower than the level indicated by the tax authority's analysis, the tax authority can propose an upward adjustment to the subsidiary's income.

The use of TNMM by multinationals in global tax planning involves several conceptual steps. First, the group will form companies, to serve as what are typically referred to as hub or principal companies, in zero- or low-tax countries.[13] The group typically will cause these hub companies to enter into contracts with the group's operating entities around the world – the various distribution, manufacturing and service-provider subsidiaries through which the group conducts its business – under which the hub companies claim to indemnify the operating subsidiaries against most of their major business risks. In legal form, the contracts establish the operating subsidiaries essentially as servants of the hub companies, performing their business operations at the behest of and under the financial protection of the hubs.

It is a hallmark of this kind of tax structure that the hub companies physically perform few active business functions of their own: instead, the hubs typically have few employees, with the great bulk of the group's personnel distributed among the group's many operating subsidiaries. The contracts, therefore, tend to reflect a certain amount of artificiality, in that they provide for many of the risks of a business to be borne in countries where few, if any, of the activities that give rise to those risks are performed. As a legal matter, however, the risk-limiting contracts established under the tax planning structure conform to patterns that might be found in agreements made between unrelated companies acting at arm's length; hence, under longstanding legal principles, tax administrations around the world generally respect their *bona fides*.

The groups involved in these kinds of contractually-based tax planning structures typically perform transfer pricing analyses, under TNMM, based on the theory that the protection against risk afforded to the group's operating subsidiaries entitles the subsidiaries to earn only limited levels of operating income, consistent with the results observed among the simplest kinds of business entities for which comparables data can be found. In general, tax administrations around the world have not challenged the sufficiency of the levels of income reported by local subsidiaries under this approach. Notable exceptions to this tendency have been India and China, which are often reported as challenging what they perceive to be low levels of subsidiary income determined by taxpayers' applications of TNMM.[14] As a result, the use of the hub structure, based upon networks of risk-limiting contracts, has become virtually universal among the world's business groups.

It seems likely to this author that the apparent toleration by most developing country governments of tax planning structures based on TNMM reflects, in large part, a homeostatic equilibrium that has developed in recent decades between countries' desire for tax revenue on one hand, and their countervailing desire to keep corporate tax burdens low to avoid discouraging inbound investment. Numerous conversations in which the author has engaged with tax specialists around the world rather strongly support this perception of political-economic equilibrium. The possibility that global toleration of TNMM-based planning structures represents an economically determined equilibrium, however, does not mean that the perpetuation of the current equilibrium is normatively desirable. In particular, there is no reason to assume that the current equilibrium happens to have settled at a point that is optimal in terms of social well-being. To the contrary, it may well be the case that the current equilibrium leaves developing countries with corporate tax revenue that is insufficient to meet the countries' reasonable economic and social needs. If that is the case, then measures designed to modify the current corporate tax equilibrium to some extent, in favour of developing countries, may provide significant net social benefits.

As a matter of practical politics, given the pervasiveness of the forces of tax competition that have brought about the current North-South corporate tax equilibrium, measures designed to change the equilibrium are not likely to occur of their own accord. Instead, multinational companies, and the governments that represent their interests, will need to be willing to exercise a degree of restraint in their tax policymaking in favour of the fiscal interests of developing countries.[15] Essentially these parties will need to be willing, as a group, to forgo tax advantages they would otherwise, as a matter of political and economic power, be able to retain, in order to assist developing countries in raising revenue to build social and economic infrastructure. This chapter assumes that multinational companies and their governments do in fact perceive advantages, at both the humanitarian and economic levels, in improving the relative fiscal positions of developing countries, so that proposals like the one suggested here are not entirely unrealistic as a political matter.

The following section of this chapter therefore proposes changes to the rules governing TNMM that are designed – subject, of course, to verification by revenue estimates – to enhance developing countries' ability to raise corporate tax revenue, while at the same time avoiding increasing corporate tax burdens to competitively untenable levels. The proposals address two features of TNMM as currently configured in the *OECD Guidelines*:

- *Problems related to comparables*. TNMM's reliance on searches for uncontrolled comparables have long been perceived as posing serious and unresolved problems in administration. On economic grounds, there are reasons to expect close comparables for the activities performed by members of multinational groups to be difficult to locate, even in wealthy countries with highly developed economies.[16] The difficulty of locating satisfactory comparables appears especially acute in developing countries, where few independent companies of any kind are likely to exist that are publicly traded, and therefore do not report financial data in a format that is useful for analysis under TNMM.[17]
- *Problems related to profit shifting through interest payments*. Large volumes of profit shifting are attributable to payment of interest by corporate subsidiaries, on loans that have been extended to the subsidiaries by zero- or low-tax hub affiliates. TNMM, however, like other transfer pricing methods under the *OECD Guidelines*, generally requires taxpayers to report minimum levels of operating income, which is an accounting measurement of income *before* payment of interest. Historically, international tax law has not sought to limit the volume of interest payments between affiliates by means of transfer pricing rules, but on separate, specialised systems of rules for limiting interest on related-party debt. However, perhaps from pressures of

tax competition, countries' limitations on interest deductions have typically been of limited effect, or have been non-existent. The OECD, in its BEPS studies, has recommended some tightening of existing interest-limitation rules, but it is unclear whether these will lead in practice to substantial changes.[18] The suggested changes to TNMM would seek to redress this difficulty to some extent by substituting 'earnings before tax' (EBT), a measure of a company's earnings *after* payment of interest, in place of operating income as the basis for benchmarking under TNMM.

Proposal for a Modified Net Margin Method (MNMM)

A Modification of the TNMM

This section outlines a proposal to modify the TNMM, which might be described as a Modified Net Margin Method. The suggested revisions would leave the rules for TNMM identical to those now in the *OECD Guidelines*, except that: (i) benchmarking would not be based on searches for comparables, but taxpayers would instead be required to earn profit margins equal to 25 per cent of the global consolidated margin earned by the taxpayer's multinational group; and (ii) the measure of profitability used for purposes of benchmarking under TNMM would be earnings before tax, instead of operating income.

Consider for illustration the situation of a distribution subsidiary, Sellco, that earns $1 billion in revenue during the taxable year. If the multinational group of which Sellco is a member reports on its annual financial statements a consolidated EBT margin of 15 per cent, then the revised TNMM will require Sellco to earn an EBT margin of .25 x 15, or 3.75 per cent. Therefore, under the revised TNMM, Sellco's income for the year should be $37.5 million. (If, alternatively, the consolidated group had operated at a loss for the year as measured by the group's consolidated EBT, then Sellco would be permitted for tax purposes to report a corresponding loss, based on the 25 per cent rule. The loss would be subject to any carryover rules allowed under the locally applicable income tax laws.)

In the case of a subsidiary that is not a distributor, but is instead a manufacturer, the revised TNMM would not base its benchmarking on the taxpayer's return on sales, but instead – as is commonly the practice today under TNMM – on the taxpayer's return on its total expenses. Consider, for example, a manufacturing subsidiary, Manuco, with total expenses of $800 million per year. If Manuco's group earns a consolidated EBT return on total expenses of 24 per cent, then Manuco would be required under the revised TNMM to earn an EBT margin of at least 0.25 x 24, or 6 per cent, indicating an arm's length level of income of $48 million. Again, if application of the revised TNMM indicates that Manuco should incur a loss, the loss will be allowed for corporate tax purposes. (As is true under the current version of TNMM, subsidiaries that are neither distributors or manufacturers, but instead are engaged in the provision of services, might be benchmarked by reference either to their returns on sales or their returns on costs, depending on the clientele served by the particular subsidiary.)[19]

The suggestion that the revised TNMM be applied using a coefficient of 0.25 – that is, that the taxpayer be required to report an EBT margin that is 25 per cent of the group's consolidated margin – reflects several considerations. First, conceptually, it seems reasonable to assume that any single function of the taxpayer, like distribution, manufacturing or the provision of services, is likely in itself to account for only a relatively small portion of the total income generated by a multinational group, and 25 per cent seems like a reasonable broad estimate of the appropriate percentage. Second, a coefficient of 25 per cent appears to lead to results that are roughly in line with expectations of practitioners, as recalled by the author, when TNMM was first developed in the early 1990s, but before its application in practice had been affected on a large scale by the proliferation of limited-risk subsidiaries. Ultimately, the choice of a particular coefficient reflects some degree of subjective judgement, but 25 per cent seems sensible (subject to verification by revenue estimates) if the revised method is to result in meaningful, but still relatively moderate, increases in effective tax burdens.

The key to the improved administrability of the revised version of TNMM is its reliance for purposes of benchmarking on information taken from groups' routinely reported financial results, rather than on data derived from attempted searches for comparables. Most large multinational groups publish their consolidated results annually, under the supervision of professional auditors and national securities regulators. Companies are unlikely to try to understate their global profitability, as that would put the companies at a disadvantage in the capital markets; therefore, the information on profitability that is published by multinational groups generally should be reliable for use in tax administration. Not all multinationals are publicly traded, but all but the smallest nevertheless maintain audited financial statements, and even those that do not typically will maintain some form of consolidated financial information. Also, those without audited statements are likely to be the smallest multinationals, for which little revenue is at stake under transfer pricing laws.

Limitations and arguable shortcomings of the MNMM

The suggested revisions to TNMM are not intended as a panacea for all problems of transfer pricing administration, but to provide a reasonable backup to current methods, and, in particular, to reduce the degree of profit shifting that the TNMM now permits in connection with the use of limited-risk subsidiaries. As a consequence of its deliberately limited reach, the revised TNMM admittedly retains some of the weaknesses of current transfer pricing methods, including the current version of TNMM.

In particular, the revised TNMM will continue to require the taxpayer and the tax authority to characterise particular subsidiaries or divisions within subsidiaries (tested parties) as distributors, manufacturers or particular kinds of service providers, and sometimes this characterisation is difficult to accomplish. In addition, the revised TNMM will continue, like OECD transfer pricing methods generally, to benchmark taxpayers' book (financial statement) incomes, not their taxable incomes. This means that, even after revision, TNMM will continue to require the taxpayer and the tax authority to determine how results under the applicable transfer pricing method should be translated from book to taxable income – sometimes a difficult accounting task. The suggested revisions to TNMM do not attempt to address this significant methodological weakness, which seems unavoidable under any transfer pricing method that is in use today.

Another limitation is that the revised TNMM would be useful to benchmark financial results only of the kinds of distribution, manufacturing and service operations to which TNMM currently is applied under the rules of the *OECD Guidelines*. Even after revision, TNMM would not be useful in benchmarking the incomes of other kinds of taxpayers, including those with especially complex operations. In particular, the revisions to TNMM would not solve the problem – currently unsolved under existing OECD transfer pricing methods – of evaluating the income of banks, insurance companies and other financial businesses. The revisions would, however, enable governments, including governments in developing countries with relatively limited tax administration resources, to reduce revenue losses in a large number of situations in which taxpayers have established tax planning structures based on the use of risk-limited distribution, manufacturing and service provider subsidiaries.

Although the revised TNMM, by benchmarking based on EBT rather than operating income, will provide developing country governments with greater protection against excessive interest deductions than is available today, the protection provided by the revised TNMM will remain somewhat porous. Because the revised TNMM will not prescribe minimum EBT levels for a group's entire operations within a particular country, but instead only for tested parties that have been identified for purposes of applying TNMM, some taxpayers will have an opportunity to seek to apportion some or all of their interest deductions to portions of their operations that are not subject to TNMM. To the extent this occurs, tax administrations will need to rely not on transfer pricing rules, but instead on special rules for the limitation of interest deductions (which, as discussed above, tend to be quite weak in many countries) to prevent excessive revenue leakage. Therefore, although the suggested revisions to TNMM should help to some extent in reducing profit shifting through the use of interest deductions, institution of the suggested new method will not obviate the need for more effective overall limitations on interest deductions.

The revised TNMM might also be criticised for basing its minimally required levels of income not on the success or failure of the specific business operations that the taxpayer conducts in its particular country, but instead on the financial success or failure during the year of the taxpayer's global group as a whole. At least in theory, this feature of the revised TNMM will dilute some of the risk-mitigating effects of the income tax. Normally, when taxpayers invest to perform particular activities within a country, they can theoretically expect that the risks of that investment will be dampened by the fact that their tax burden will increase only in the case of success, and that failure will be cushioned to some extent by deductible losses in that country. This risk-dampening effect would seem to be diluted if tax obligations in a particular country are determined by the taxpayer's global, rather than local, financial results, from all the activities in which the group is engaged.

This problem, however, seems likely to be less significant in practice than in theory. It would indeed be better from the perspective of mitigating financial risk to base tax results on a taxpayer's local rather than global profitability – but the problems of transfer pricing administration over many decades have shown that measurement of local profitability with any degree of precision is infeasible. Indeed, the inherent technical problems of local income measurement appear to have contributed greatly to the current situation with respect to base erosion and profit shifting. In addition, the revised TNMM's approach to benchmarking in effect allows multinational groups some degree of cross-border offsetting of losses and sub-part profitability – a feature that investors in the group as a whole should find attractive on grounds of risk mitigation.[20]

It also might be objected that, under the revised TNMM, start-up subsidiaries that are contained within profitable multinational groups might be required to report positive levels of income, even before they realistically could be expected to be earning a profit on a local basis. This prospect might be viewed as posing a disincentive to new inbound investment. It is unclear whether the taxation of local subsidiaries during a start-up period is entirely inappropriate as a conceptual matter. Arguably, all subsidiaries of a multinational group should be seen as supporting the operations of the group as a whole, even when some of the subsidiaries are in start-up phases, as all subsidiaries can be seen as mutually supportive parts of the group's overall programme of geographic diversification. Thus, even in a start-up period a subsidiary can be seen as performing a service for the parent company, for which the subsidiary should receive net compensation. This argument, however, is not likely to be persuasive to developing country governments, which historically have perceived some kind of special tax treatment for start-up operations as being necessary to afford appropriate investment incentives. Accordingly, it is suggested that governments that currently accord new businesses tax incentives during a start-up period continue to do so after adopting revisions to TNMM.

Some may criticise the suggested revisions to TNMM on conceptual grounds, as a departure from a longstanding international consensus in favour of transfer pricing methods that adhere closely to reliance on data from comparables, and on refraining from reliance on group-wide financial results. It is true that both of these preferences are now deeply embedded in practice under transfer pricing law, and even minor departures from these tendencies might reasonably raise fears of unintended adverse effects. Conceptual models of taxation, however, are always approximate. International tax law is an amalgam of many different and sometimes idiosyncratic rules, which have been conditioned over time by a wide variety of practical considerations, political as well as economic. Models in tax policy and administration inevitably need to change from time to time, at least to some extent, to meet new economic and political needs; indeed, even the changes to the *OECD Transfer Pricing Guidelines* in 1995, which introduced the TNMM, responded to changing perceptions of the practical exigencies of transfer pricing administration. Conceptual models have their value in tax policy and administration, but they should not be elevated to the level of a controlling theology. In the current global environment, some departure from historically influential conceptual models should be seen as acceptable if it can achieve politically viable improvements in the fiscal situation of developing countries.

Conclusion

Revenue estimates will need to be made as a first step in considering the implementation of the proposals made in this chapter. In addition, the adoption of changes to TNMM along the lines suggested in this chapter will depend heavily on some measure of political support from the world's large multinational companies, and from the governments of countries where the groups are based. On both political and economic grounds, however, proposals along the lines suggested above would appear to offer sufficient potential, from the standpoint of contributing to the fiscal wellbeing of developing countries, to justify careful evaluation, beginning with an assessment of their likely revenue effects.

Notes

1. Portions of this chapter are based on material previously published by Bloomberg BNA. These materials are reprinted with permission, all rights reserved.
2. Durst (2015b). Chapters of this study were originally published as articles, as listed in the references.
3. e.g. Duncan and Cohen (2012) and Syal and Wintour (2012).
4. e.g. ActionAid (2012).
5. This topic is addressed particularly in Durst (2013c). The discussion in that article is based on Durst (2012a) and Durst (2012b).
6. In some situations taxpayers may be able to mitigate the uncertainty raised by arm's length pricing rules by obtaining advance pricing agreements (APAs) before making investments, or by obtaining relief from double taxation after the fact through competent authority negotiations conducted under bilateral tax treaties. However, APAs are expensive and typically cannot be completed before investment decisions must be made; competent authority negotiations can involve considerable expense and delay, are not always concluded successfully, and are unavailable in cases where the countries involved in particular cross-border transactions are not party to a bilateral tax treaty.
7. For a discussion of formulary apportionment among the US states, see Durst (2013e), and Chapters 6 and 10 in this collection.
8. The accounting difficulties arising from attempts to apply formulary apportionment to only a portion of a taxpayer's combined global income are discussed in Durst (2013a, 2013b).
9. See Durst (2013d).
10. See the discussion of this topic in Durst (2013a), and by Murphy and Sikka in Chapter 5 of this collection.
11. For discussion of this topic, see Hanlon and Shevlin (2005).
12. The various profit splits in use today are described in the OECD's *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (OECD 2010), beginning with paragraph 2.118.
13. Although many countries are willing to host hub companies, the Cayman Islands, Bermuda and the British Virgin Islands are among the jurisdictions in which multinational groups establish their hubs. The legal arrangements involved in hub-based tax planning are discussed in detail in Kleinbard (2011a, 2011b) and US Congress (2010). A report that is highly critical of the effects of hub tax planning structures on developing countries has been compiled by the non-governmental organisation ActionAid (ActionAid 2012).
14. The extent to which the apparent reluctance of other countries to challenge TNMM results can be attributed to considerations of tax competition, to technical difficulties encountered by revenue administrations in applying TNMM, or to some combination of these two factors, cannot, of course, be determined.
15. See, e.g., Durst (2014b).

16. Essentially, the argument is that multinational groups form in industries where the common ownership of legal entities performing different functions is necessary in order to operate competitively. Therefore, in industries that are organised in international groups – precisely the industries for which transfer pricing regulation is required – few satisfactory comparables for, say, distribution and manufacturing subsidiaries are likely to be found. See, e.g., Durst and Culbertson (2003: 81-87).
17. The OECD and other international organisations are committed to assisting developing countries in seeking remedies for current difficulties in locating comparables for use in transfer pricing administration. The author hopes that the observations offered in this chapter will be helpful in the design and implementation of this technical assistance effort.
18. The recommendations relating to the limitation of interest deductions are found in the OECD's reports under BEPS Action 4: OECD (2014e), OECD (2015a Action 4), and OECD (2016). For a discussion of this topic, see Durst (2015c), and Chapter 1 above.
19. Subsidiaries that provide services primarily to unrelated customers in the local market (as might be the case, e.g., for a local subsidiary of a global oil drilling services group) are typically treated under TNMM similarly to distributors, and benchmarked on the basis of return on sales. Subsidiaries that provide services mainly to related parties (e.g. subsidiaries that provide R&D services, or operate customer call centres for the benefit of other members of their commonly-controlled groups), are typically treated under TNMM similarly to manufacturers, and are benchmarked on the basis of their returns on costs.
20. An alternative to basing required margins, under TNMM, on consolidated group results would be to adopt a system of fixed margins similar to that employed by Brazil. Fixed margins, however, would appear to involve more potential for economically anomalous results than the approach suggested here; moreover, fixed margins, unlike consolidated group margins reported in companies' audited financial statements, are vulnerable to political manipulation.

Chapter 4

Formulary Apportionment and International Tax Rules

Reuven S. Avi-Yonah and Zachée Pouga Tinhaga

Any proposal to adopt unitary taxation (UT) of multinationals has to contend with whether such taxation is compatible with existing international tax rules, and, in particular, with the bilateral tax treaty network. Indeed, some researchers have argued that the separate accounting (SA) method and the arm's length standard (ALS), introduced in the early twentieth century,[1] are so embodied in the treaties that they form part of customary international law, and are binding even in the absence of a treaty. We disagree, because the unitary approach is just as widely embodied in most of the current international tax treaties, and, where there are no treaties, national laws allow for a unitary approach to taxation. In this chapter we will argue that UT can be compatible with most existing tax treaties, and that developing countries, in particular, can implement it in most cases with or without a tax treaty and in accordance with their domestic laws.

UT and the existing treaty network

Transfer pricing is currently governed by Article 9 of the treaties, which assumes the SA method because it addresses the commercial or financial relations between associated enterprises.[2] Initially, the term permanent establishment (PE) was meant to include separate entities (subsidiaries). However, in 1933 the League of Nations introduced Article 5, ancestor to the current Article 9 of the Model,[3] where separate enterprises were no longer considered PEs. If UT were adopted, Article 9 would become irrelevant in those situations to which UT applies (i.e. where a unitary business is found to exist), because UT ignores the transactions between related parties, and treats them instead as part of a single enterprise.

Instead, UT would be governed by Article 7. Under Article 5(7), '[t]he fact that a company that is a resident of a Contracting State controls or is controlled by a company that is a resident of the other Contracting State… shall not of itself constitute either company a permanent establishment of the other'. However, it is well established that a dependent agent can be a PE (see Art. 5(5)), and whether an agent is dependent is based on whether the principal exercises legal and economic control over the agent.[4] 'An agent that is subject to detailed instructions regarding the conduct of its operations or comprehensive control by the enterprise is not legally independent'.[5]

In the case of a modern, integrated multinational enterprise (MNE) that operates as a unitary business, a strong argument can be made in most cases that the parent of the MNE exercises both legal and economic control over the operations of the subsidiaries, especially where the subsidiaries bear no real risk of loss, and acquire goods and services exclusively or almost exclusively from the parent or other related corporations. The existence of Intranets in most MNEs has resulted in most important operational decisions being centralised. In that case, the subsidiaries should be regarded as dependent agents of the parent. Such a finding is in fact made with increasing frequency in both developed and developing countries (Le Gall 2007).

If the subsidiary is an agent of the parent, Article 7(2) of the treaties requires the attribution of the same profits to the subsidiary 'that it might be expected to make if it were a distinct and independent enterprise engaged in the same or similar activities under the same or similar conditions'. Arguably, the application of UT satisfies this arm's length condition, because in the absence of precise comparables, which almost never exist, it is not possible to determine exactly what profits would have been attributable to the subsidiary under SA.

When the US adopted the Comparable Profit Method and Profit Split in the 1994 transfer pricing regulations, some countries objected that it was violating the treaties because these methods did not rely on exact comparables to find the arm's length price. However, these objections eventually subsided, and the OECD endorsed similar methods in its transfer pricing guidelines, and more recently granted them equivalent status to the traditional methods. The US has always maintained that both the Comparable Profit and Profit Split Methods satisfy the arm's length standard despite the lack of precise comparables (and in the case of profit split, using no comparables at all to allocate any residual profits). Similarly, the US has maintained that the 'super-royalty rule' of the Internal Revenue Code section 482 (which requires royalties to be 'commensurate with the income' from an intangible, and therefore subject to periodic adjustment) is consistent with the arm's length standard, even though no comparables can be found to show that such adjustments are ever made by unrelated parties.

Before the recent changes to the OECD Model Convention (MC), it was therefore quite plausible to argue that UT was compatible with the treaties if the subsidiary were as a factual matter legally or economically dependent on the parent so as to constitute a PE. In addition, a country that wished to adopt UT could rely on the language of the OECD MC Article 7(4): 'Insofar as it has been customary in a Contracting State to determine the profits to be attributed to a permanent establishment on the basis of an apportionment of the total profits of the enterprise to its various parts, nothing in paragraph 2 shall preclude that Contracting

State from determining the profits to be taxed by such an apportionment as may be necessary; the method of apportionment adopted shall, however, be such that the result shall be in accordance with the principles contained in this Article'.

Since it can be argued that in the absence of comparables the result reached under UT is equivalent to what could be reached under SA, this language seems to permit the use of UT for dependent agent PEs.

However, the OECD in 2010 adopted changes to Article 7 of the MC that would make this argument more difficult to sustain. Specifically, the OECD adopted the 'authorised OECD approach' to the attribution of profits to a PE, which treats a PE as the equivalent to a subsidiary, and has suggested that the transfer pricing guidelines that explicitly reject UT should be applied to PEs. In addition, the OECD has followed the US lead and deleted Article 7(4) from its MC. However, not all OECD countries accepted these changes, which were also rejected by developing countries, and the UN model still contains Article 7(4).

In fact, the vast majority of existing actual treaties have not been revised to incorporate those changes. In particular, our research shows that many developing country treaties contain Article 7(4), even when the treaties are with OECD members.[6] We identified 174 such treaties by developing countries that contain this language, including recent treaties such as India-Lithuania (2011), India-Nepal (2011), Korea-Panama (2010), and treaties with OECD members such as India-Sweden, India-UK, Mexico-UK, and Sri Lanka-US. In all of those cases, or in the absence of a treaty, countries should be free to implement UT in accordance with the analysis set out above.

Customary international law

Nor does the argument of customary international law impede the application of a UT approach. The argument is based on the contention that because SA and the ALS are embodied in all the treaties, they should be considered binding. But embodiment in the treaties is not enough to create a customary international law ban on UT, since Article 7(4) is embodied as well. Furthermore, it should be noted that model tax treaties do not, in any way or form, create a 'right to tax'.[7] The key issue is the actual practice of states – what countries actually do – as domestic laws reign supreme in the area of taxation, and many of them follow UT approaches in practice. In addition, countries should be free to follow the UN Model, which does not adopt the changes made by the OECD, and which is also widely followed.

Finally, it can be argued that even the OECD may be revising its approach. The authorised OECD approach may have marked the high point of OECD commitment to SA. With the unfolding of the base erosion and profit shifting (BEPS) project,[8] which is influenced by large developing countries like China and India, it is possible that the OECD may be stepping back from its total commitment to SA. Specifically, the adoption under BEPS of country-by-country reporting (which was already required for extractive industries in the US) can be the basis for implementation of UT.[9] This development is very important for developing counties, as many rely heavily on extractive industries. The requirements of country-by-country reporting will allow a profound change in taxation of the major industry in the developing world: the extractive industry.

Does Article 7 preclude application of UT to entire MNEs?

One important question raised by Durst (Durst 2013a: 8) is whether the requirement that profits be attributable to a PE under Article 7 of the model treaties means that if UT is applied, it must be done on an activity-by-activity basis. Otherwise, profits would be attributed to the PE that have nothing to do with it, because the PE is not engaged in the activity that generates these profits. However, one would rather not make this assumption, because allowing an MNE to split its activities among different subsidiaries is notoriously hard to combat, and facilitates precisely the kind of profit shifting that developing countries, in particular, have a hard time policing.

In our opinion, the phrase 'attributable to a permanent establishment' does not preclude attribution of global profits of an MNE to a PE under whatever formula is adopted for UT purposes. The reason is that once a functional analysis is performed, and whatever can be attributed to the various functions by using either comparables or a proxy, such as a fixed percentage of costs (Avi-Yonah, Clausing and Durst 2009), the remaining residual can be allocated in any way we wish, since it is attributable to the entire MNE.

Transfer pricing adjustments frequently result in a residual that cannot be allocated under the traditional functional analysis, because it results from cost savings that inhere in the relationship of the group members to each other. The classic example is the US case involving Bausch and Lomb (B and L).[10] B and L developed an unpatented technology that enabled it to manufacture contact lenses at a cost of \$2.50 per lens, when its competitors had costs of \$7.50 per lens. B and L contributed the knowhow to its Irish subsidiary, to enable it to manufacture the lenses. The question facing the US court was whether to accept B and L's view that the Comparable Uncontrolled Price method should apply to determine the price charged by the Irish subsidiary to its parent for lenses based on a comparison with prices charged by independent lens manufacturers, despite the difference in production costs. The IRS argued that the residual profit from the know-how belonged to the US parent that developed it, but the court rejected that view because the residual profit inhered in the relationship between the parties. Had B and

L Ireland been unrelated to its parent, the know-how would have been disclosed, the competitors would have used it, and the residual profit would have disappeared.

The OECD *Transfer Pricing Guidelines* do not say what should be done with residuals under the Profit Split Method. The US regulations followed the White Paper,[11] in assuming that any residual results from intangibles and allocating the residual to where the intangibles were developed. This is a view that favours US revenue interests, because more intangibles are developed in the US than elsewhere, but not surprisingly it has not been accepted by other OECD members. Nor is it congruent with the facts, since residuals can result from other reasons, such as cost savings from synergies or advantages of scale, and they usually inhere in the relationship among the group members and cannot be allocated to any one of them.

The OECD's preferred method of applying the Profit Split Method is to analyse the functions, assets and risk of each member of the affiliated group. However, in the context of residuals this method also proves to be illusory. A functional analysis can only be applied to those functions that can be assigned to the group members, such as production or distribution, but it does not help with residuals that result from the relationship among the group members. Assets can include intangibles, which are usually the most valuable assets of a modern MNE, but intangibles also get their value from the relationship among the group members, as illustrated by the B and L case. This makes it very difficult for them to be allocated to either where they were developed or where they are exploited. The Glaxo case, in which the IRS and HMRC disagreed about whether the profit from selling Zantac, a drug developed in the UK, into the US market were attributable to the intangibles embodied in the drug itself or those used in Glaxo's marketing, resulted in massive double taxation.[12]

Risk is the trickiest concept of all. Recent case studies by the US Joint Committee on Taxation (US Congress 2010) reveal a model in which the entrepreneurial risk for a product is assigned to an affiliate in a low tax jurisdiction, and the manufacturing and distribution of the product in high tax jurisdictions are done on a contract manufacturing and commissionaire basis. But it is not clear what the allocation of entrepreneurial risk means among related parties. If a product fails because of technological change or defects in manufacturing or environmental hazards, the risk is effectively borne by the entire MNE – or more accurately by its management, who risk being fired, and by its shareholders, who see the stock price plummet.

Under UT, these issues can be solved by using the formula to allocate the residual by the Profit Split Method. The specific formula used can be negotiated, as discussed in other chapters in this book, and by Durst

(2014c). But in our opinion it is clear that whatever formula is decided upon should be applied under UT to the entire profit of the integrated MNE, and not divided into separate activities, and that this would be perfectly congruent with Article 7.

UT and developing countries

What can a developing country do to implement UT? In the absence of a treaty, or in the event that the treaty contains Article 7(4) language, the biggest obstacle to UT implementation may be access to information.

The recent redraft of the UN *Transfer Pricing Manual* recommends that among the documentation that a tax administration should request for a transfer pricing audit should be the 'Group global consolidated basis profit and loss statement and ratio of taxpayer's sales towards group global sales for five years' (para. 8.6.9.12). This provides a good basis for application of UT. The development of a global template for country-by-country reports by MNEs, mandated by the G20 and developed as part of the OECD's BEPS project, would also facilitate such an approach. The rejection of UT in the OECD *Transfer Pricing Guidelines* is based on its definition of formulary apportionment as 'applying a formula fixed in advance'. This leaves considerable scope for adoption of UT approaches with ad hoc formulas, which are not based on a fixed formula.

Specifically, allocation according to operating expenses would be clearer and easier to administer, and most importantly would fit within the current rules of international tax. We have argued that in the context of the Profit Split Method, the residual profit cannot be allocated on the basis of comparables, and therefore can be allocated based on operating expenses without deviating from the ALS (Avi-Yonah *et al*. 2009). This would entail first assigning to each country an estimated market return on the tax deductible expenses incurred by the multinational group in that country.

Developing countries should therefore be encouraged to draft their transfer pricing laws to include powers to adjust the accounts of any foreign-owned local company or branch, if the revenue authority considers that its accounts do not fairly reflect the profits earned locally, to bring the taxable profits into line with those that such a business would be expected to earn, having regard to (a) similar businesses either in that country or elsewhere, and/or (b) the relationship of the local business to the worldwide activities of the corporate group of which it is a part. This would involve analysis and comparison of provisions in the tax laws of appropriate countries. A good model would be Section 482 of the US Internal Revenue Code, which predates the ALS and is very open-ended.[13]

Conclusion

The transition from SA to UT is likely to be a long process, and it may ultimately require renegotiating treaties or even drafting a multilateral treaty like the EU's Common Consolidated Corporate Tax Base. However, a good beginning can be made now by exploring how developing countries can adopt UT principles within the context of the existing treaty network. This paper has endeavoured to show that such approaches are quite feasible, because most developing countries are not bound by the authorised OECD approach to Article 7, and even the OECD may be reconsidering its approach in the context of the BEPS project.

Notes

1. The reports to the League of Nations of 1927-1933, which resulted in the first model tax conventions, were reprinted in a Legislative History of US Tax Conventions, and are now available online in the Digital Collections of the University of Sydney; for a brief account of the history see Picciotto (2013), esp. pp.10-15.
2. The quoted articles are identical in all the tax treaty models except when the differences are discussed in the text.
3. See League of Nations Fiscal Committee (1933), Annex, Art. 5.
4. See, e.g. *Roche Vitamins Europe Ltd v. Administracion General del Estado*, Case No. STS/202/2012 (Spanish Supreme Court Jan. 12) (Swiss principal had PE in Spain through an affiliated Spanish company; activity of the subsidiary was directed, organised and managed in a detailed manner by the principal); Salad Dressing, Fiscal Court Baden-Wurttemberg, 3 K 54/93, Internationales Steuerrecht 1997 (Swiss principal had a PE at the premises of an unrelated German contract manufacturer based on detailed instruction by principal); *Milcal Media Limited*, Court of Appeal, Stockholm, Case nos. 7453-54-02 (2005) (Cyprus principal had a PE through Swedish subsidiary because it was subject to detailed instructions and control); *eFunds Corp. v. ADIT*, Case 45 DTR 345 / 42 SOT 165, Income Tax Appellate Tribunal, Delhi; Lucent Technologies v. DCIT, Income Tax Appellate Tribunal, 2008 (US parent company had a service PE in India); and the cases cited by Le Gall (2007).
5. U.S. Treasury (2006: Art. 5(6)).
6. See Appendix A of Avi-Yonah and Pouga Tinhaga (2014).
7. Vogel (1997: 26) and OECD (1958: 12).
8. See final BEPS reports (OECD 2015a).
9. See BEPS final report on country-by-country reporting, available at www.oecd.org/tax/transfer-pricing-documentation-and-country-by-country-reporting-action-13-2015-final-report-9789264241480-en.htm (last retrieved 26 July 2016).
10. *Bausch & Lomb Inc. v. C.I.R.*, 933 F.2d 1084.
11. US Treasury (1988) (a US Treasury study of transfer pricing methodology that resulted in the development of the Comparable Profits Method and Profit Split).
12. *GlaxoSmithKlineHoldings (Americas) Inc. and Subsidiaries v. Commissioner*, No. 5750-04 (T.C. Apr. 2).
13. 'In any case of two or more organizations, trades, or businesses (whether or not incorporated, whether or not organized in the United States, and whether or not affiliated) owned or controlled directly or indirectly by the same interests, the Secretary may distribute, apportion, or allocate gross income, deductions, credits, or allowances between or among such organizations, trades, or businesses, if he determines that such distribution, apportionment, or allocation is necessary in order to prevent evasion of taxes or clearly to reflect the income of any of such organizations, trades, or businesses.' IRC s. 482.

Chapter 5

Unitary Taxation: the Tax Base and the Role of Accounting

Richard Murphy and Prem Sikka

Introduction

As argued generally in this book, the world's system of corporate taxation is in crisis. There is, very obviously, a need for fundamental reform of that system, and yet so embedded is the Organisation for Economic Co-operation and Development's (OECD's) system of arms length transfer pricing, that even research into available alternatives is limited. Since this principle is based upon the idea of separate entity accounting, the relation between taxation and corporate accounts is central.

This chapter looks at one of the issues that would be key to the implementation of any unitary taxation system for corporations, whether on a national, regional or international basis – how accounting data may provide a foundation for a unitary base for corporate taxation, and what changes in approach to that data may be required to achieve that purpose. Despite the clear importance of this issue to the prospects for unitary taxation, it has, like many other aspects of this subject, been little studied. As a result there are few precedents for us to draw upon in considering this subject, and we have had to go back to some first principles when making suggestions. Hence, this chapter is in five parts.

First we consider, very briefly, the current purposes of accounting information, and why these make it unsuitable for the purposes of assessing taxation of any sort, let alone on a unitary basis. Secondly, we briefly review the evidence on different countries' approaches to the relationship between accounting data and taxable profits. Thirdly, we look more specifically at the proposals made in the EU's Common Consolidated Corporate Tax Base (CCCTB), and show that this has proposed a potentially coherent accounting methodology for preparing a unitary taxation base. This leads to discussion on the varying approaches that can be adopted to create this tax base from the disparate accounting information that needs to be either consolidated or aggregated for this purpose. Next, we look at the practical consequences of these issues, and as a result make suggestions as to the ways in which they might be resolved in practice. We propose that what might initially appear to be intractable problems can be addressed in stages, if appropriate accounting measures and design features are adopted to facilitate progress towards unitary taxation.

The purposes of financial accounting data

The starting point for a company's reporting for both financial and tax purposes is its basic accounting books and records. Since separate records are not normally expected to be kept for the two purposes, tax calculations usually begin with the financial statements that are based upon these records. However, this gives an impression of convergence between the information needs for tax and accounting purposes, which can be misleading. Whilst both accounting and taxation share vocabularies that refer to capital, income and profit, there is considerable divergence in the meaning that the two practices attach to such terms.

There is no room here to discuss the history of accounting, and developments in the purpose of financial reporting over time. It is sufficient to note that contemporary financial reporting is primarily intended to respond to the assumed needs of shareholders, and those buying and selling shares or other financial instruments in capital markets. Thus, the US Financial Accounting Standards Board (FASB) states that the primary objective of financial reporting is 'to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity' (FASB 2010: 1-2). Indeed, the current view of the IFRS Foundation, the largest accounting standard setter, is summarised in their Conceptual Framework:

> [The IFRS Foundation] believes that further [accounting] harmonisation can best be pursued by focusing on financial statements that are prepared for the purpose of providing information that is useful in making economic decisions.
>
> The Board believes that financial statements prepared for this purpose meet the common needs of most users. This is because nearly all users are making economic decisions, for example:
>
> (a) to decide when to buy, hold or sell an equity investment.
>
> (b) to assess the stewardship or accountability of management.
>
> (c) to assess the ability of the entity to pay and provide other benefits to its employees.
>
> (d) to assess the security for amounts lent to the entity.
>
> (e) to determine taxation policies.
>
> (f) to determine distributable profits and dividends.
>
> (g) to prepare and use national income statistics.
>
> (h) to regulate the activities of entities.

> *The Board recognises, however, that governments, in particular, may specify different or additional requirements for their own purposes. These requirements should not, however, affect financial statements published for the benefit of other users unless they also meet the needs of those other users.*
>
> (IASB 2013: A14) (emphasis added)

In other words, accounting data produced using the two most important sets of accounting principles in use in the world is explicitly not at present prepared for the purpose of assisting the assessment of corporate tax liabilities. It is, therefore, almost inevitable that accounting data produced by companies for use by their suppliers of capital will have to be, at least to some degree, restated when it comes to the use of that data for tax purposes. The areas where issues arise are diverse, but there are three core problems with using either US Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS) data (and that from many other GAAPs, because each country is at liberty to create its own).

Firstly, financial reporting standards do not aim to provide data indicating the profit or loss as conventionally understood for an accounting period. This is the primary reason why the historically familiar term 'profit and loss account' has been replaced in these financial statements with the term 'income statement'. What that statement shows is the movement in the recorded financial value of the reporting entity over the period covered by the financial statements. As a result, the data in the income statement mixes realised profit (i.e. activity likely to have cash consequences) with unrealised profits, which are simply movements in value of assets and liabilities that the reporting entity includes on its balance sheet. Since these key financial reporting standards also do not require that these two very different types of change in financial fortune be reported separately, there is real risk that the reported surplus or deficit for the period (which is not in any sense a profit or loss as once understood) might have no bearing at all on what has conventionally been thought of as taxable profit.

The second problem is that the criteria for measuring movements in value used by companies reporting under these financial reporting standards need not be consistent. To summarise a complex issue, all accounting (including tax accounting) requires the use of a 'capital maintenance concept' against which change in value is measured. For example, physical capital might be the basis for recognising value change. This will then require that inventory be valued at, in effect, an approximation of replacement cost. Alternatively, financial value might be maintained, implying a very different basis for inventory valuation. Financial capital can also be maintained in current or historical terms. On all these issues financial reporting standards are not consistent, and not even mandatory in all cases: considerable discretion is left to companies themselves, or to the jurisdiction in which they report, on these issues. The result is that not only do financial statements not report a figure for income that is useful for tax purposes, but that figure may well be inconsistently prepared. This makes it of little use for tax purposes. Any tax base must ensure that a consistent and comparable capital maintenance concept is used if the system is to be perceived as fair. The use of financial accounting does not make that possible.

Thirdly, even taking the above points into consideration, there will still be items that can quite appropriately be included in the financial statements of a corporation that are either not taxable receipts, or that are not to be taken into account as costs that can be offset against income for tax purposes. The adjustments required in this area are familiar to most tax practitioners, but the main ones are worth noting. For example, some capital gains are not considered taxable in some jurisdictions. Further, it is commonplace that the depreciation charges included in the financial statements of almost all companies are not allowed for tax purposes. This is because depreciation, which is in accounting terms seen as a measure of the diminution in the value of certain assets as they are used over time, is too subjectively measured to form the basis of a claim for an expense for tax purposes, and capital allowances are instead given in its place. In the course of our research for this project, we surveyed how widespread this modification of accounting estimates for taxation purposes was in 149 corporate tax systems in jurisdictions covering 98.46 per cent of world GDP, focusing especially on developing countries. Whilst the degree of modification did vary from jurisdiction to jurisdiction, we could find no jurisdiction that accepted unmodified financial accounts for tax purposes (Murphy and Sikka 2015: Section 4).

Combine these three factors, and it is clear that financial statements are not readily compatible with the demands of tax accounting, whether for conventional or unitary taxation.

The focus on prediction of future cash flows depends on a range of revenue recognition and valuation concepts, such as fair value, market value, present values, deprival values and mark-to-market models. The emphasis on reporting to capital markets means that profits and losses can be recognised simply because the market prices of assets and liabilities have fluctuated, irrespective of any actual sale. The actual or historical prices of assets are not important in this model, and unrealised profits can be recognised in financial statements. This approach is now central to the accounting and financial reporting standards set by both the US FASB and the IFRS issued by the International Accounting Standards Board (IASB), and is in marked contrast to the requirements of most tax authorities. Taxation is generally levied on realised profits, whereas accounting standards directed at financial markets prefer valuations based on anticipated profits.

At this most basic level the conflict between accounting for taxation purposes and financial reporting is already obvious. A second major reason for the divergence (as the fifth section evidences) is that financial accounting approaches to the definition of key concepts such as depreciation, profits and capital are frequently considered to be too fuzzy for taxation purposes (Lamb 2002). Hence a more prescriptive approach is often adopted for taxation purposes: for example, depreciation charges are commonly replaced with a capital allowance for taxation purposes.

Adjusting accounting data for tax purposes

One of the hopes of some, at least, of those who have promoted unitary taxation has been that it may be possible to use it to overcome one particular aspect of tax avoidance, which has been the arbitraging of differing accounting methodologies to secure a tax advantage.

This opportunity presents itself most clearly if the unitary apportionment to be used covers the enterprise as a whole. There is very good reason for this: when accounts are prepared for the enterprise as a whole, only one accounting standard is used, and the impact of all intra-group transactions should have been eliminated from the financial statements in the course of the consolidation process that is a prerequisite of preparing group financial statements. All the issues noted in the previous section still suggest that those group financial statements are not a suitable basis for assessing corporation tax, but the risk of arbitrage between different financial reporting standards in the preparation of the financial statements of a group of companies is reduced.

This is not the case if unitary taxation is applied to only a part of the reporting enterprise. This might happen, for example, because the unitary tax base was being applied to only part of the geographic area in which it might operate. When this happens, as might well be the case (e.g. the European Union's CCCTB would work on this basis), then two serious arbitrage risks remain. This can continue despite the fact that there has been growing adoption of IFRS. This is because even an issue as important as precisely when and how to recognise revenue has been surprisingly neglected in those standards until recently, although an IFRS has recently been proposed to try to resolve this issue. Despite that, it is entirely possible, at least at present, for income from an intragroup source to be recognised outside the unitary tax base in a later period than the matching intragroup cost might be recognised within it. In other words, the opportunity for arbitrage still exists.

This risk is dramatically increased because there is at present no requirement that members of a group of companies, if they are in different countries, prepare their financial statements on the basis of the same set of financial reporting standards, and many might for legal reasons use a local standard that is entirely inconsistent with that used by the group as a whole. In this case the risk that there will be timing mismatches within and without the unitary tax base is significant. This creates the very real possibility that costs will be accelerated where offset against income will be most tax advantageous, and that the matching income will be either deferred for recognition purposes in another location, or will simply be relocated to a place where tax might not be due, to secure a tax advantage.

Many opportunities for such arbitrage exist. One has been with regard to the basis for stock (inventory) valuation, for which some territories, notably the USA, use what is called the LIFO (last in, first out) basis of valuation, whereas others, such as the UK and most of Europe, used the FIFO (first in, first out) basis. This difference in approach can, depending upon rates of inflation and inventory flows, produce significant distortions in the recognition of income in reported financial statements. Since intragroup transfers of inventory are commonplace within multinational companies, this has given rise to significant opportunity for accounting arbitrage undertaken with a tax motive.

What this then suggests is that there are additional issues to address when the relationship between accounting data and unitary taxation bases are considered on a regional basis. A study of the EU's CCCTB helps suggest ways in which these issues may be addressed, because it has recognised that these problems exist and has sought to address them in innovative ways. In effect, it recognises that there are two ways in which accounting data could be adapted for regional unitary taxation purposes.

The first would be to adopt a 'top down approach', which implies starting from the group consolidated accounts. It would, however, be necessary to eliminate some companies under common control that are represented in the group consolidated financial statements because they would be operating outside the regional tax base. Unless definitive guidance on how to achieve this goal was given, arbitrage opportunities would remain, and for all the reasons previously noted considerable difficulties will be encountered in trying to achieve that goal.

Alternatively, a 'bottom up' approach might be used, resulting in a new aggregation or consolidation of those entities that are within the regional tax base. We stress that in either case there is little likelihood that the tax base will directly relate to the group financial statements, whilst the risk of arbitrage between accounting systems will remain between group companies within the regional tax base and those outside it. But, for the reasons we note in the next section, there appears to be much greater merit to this second alternative, albeit this means that in anything but a global unitary tax calculation the corporate taxation base will have to adjust reported accounting profits for many more reasons than those already noted in the second section.

The CCCTB approach

The proposal being developed by the EU for a CCCTB seeks to harmonise the tax base on which each member state can levy taxes, applying unitary taxation and formulary apportionment. A review of the development of the CCCTB proposal over a period of more than a decade, including the revisions proposed in 2013,[1] shows that it has recognised the need to adjust accounting profits for taxation purposes. Consequently, the CCCTB proposal now embodies the first attempt at an internationally harmonised definition of a tax base for corporate income taxation. There is no room to consider all the detailed provisions in those proposals, whether as originally put forward or as now suggested, but we will bring out what we consider to be the most salient points.

The EU Commission adopted what might best be called a pragmatic approach to accounting data. Firstly, and wisely, they have in essence entirely dropped the notion of profit as a basis of taxation. This is the obvious reaction to the problems raised in the second section, above. Instead, the CCCTB adopts a transactional approach to defining corporate income, stating in Article 10 that: 'The tax base shall be calculated as revenues less exempt revenues, deductible expenses and other deductible items'.

This Article does not use the term profit in defining the tax base. However, Article 1 defines profits as: 'an excess of revenues over deductible expenses and other deductible items in a tax year'.

In effect this aggregates the individual calculations that Article 10 requires. The resulting notion of profit is far removed from the much broader accounting definition, and effectively suggests that the tax base is the subset of all the accounting transactions undertaken by a company that may fall within the scope of corporate taxation.

The CCCTB is quite specific about the way in which that subset of transactions should be identified, stating in Article 9 that: 'In computing the tax base, profits and losses shall be recognised only when realised. Transactions and taxable events shall be measured individually. The calculation of the tax base shall be carried out in a consistent manner unless exceptional circumstances justify a change. The tax base shall be determined for each tax year unless otherwise provided. A tax year shall be any twelve-month period, unless otherwise provided'.

Based on these three provisions, a clear accounting framework can be seen to be inherent in the CCCTB. Its key characteristic is that it is transactionally based, hence the emphasis upon revenues less costs. Defining net taxable income in this way also makes clear where the focus of this accounting framework lies: revenue recognition is its core objective. This puts it in marked contrast to the prevailing financial accounting norms promoted by the FASB and the IFRS, both of which (as we discussed above) are heavily focussed on the fair valuation of the assets and liabilities of the entity from the viewpoint of the capital markets, which makes balance sheet valuation their core objective.

Placing revenue recognition on a prudent and consistent basis also contrasts this CCCTB accounting framework with most prevailing accounting norms. These have, for example, imprudently demanded that losses be recognised on a realised and not anticipated basis until reform of this issue was forced onto the agenda in 2014.

The CCCTB also removes any choice of capital maintenance concept: its adoption of a realised profit approach to the recognition of income makes clear that the preservation of historical financial capital is its core capital maintenance concept. This is, of course, consistent with the long-term prevailing philosophy of most tax systems, that tax should only be paid when cash to facilitate that payment has been realised.

The adoption of an accounting philosophy that is so far removed from that promoted by many international and national financial reporting standards boards means that the EU Commission had to propose that the CCCTB use an unexpected approach to the aggregation of profits to form a unitary taxation base. In this context the term aggregation is appropriate, because what the Commission suggested was that each company to be included in that unitary taxation base should have its own accounting profits adjusted in accordance with the rules laid down by the CCCTB, and it is the resulting adjusted income that should be aggregated to provide the EU-wide tax base that will then be apportioned to individual member states for taxation purposes.

It should be stressed that this is not, in accounting terms, a consolidation, despite that term being used to describe this tax base in the Commission's CCCTB proposal. An accounting consolidation involves the preparation of a single set of financial statements covering the consolidated entities with all accounting transactions with third parties, and assets owned and liabilities owing to such third parties, each being stated as single numbers within that consolidated financial report, all being adjusted to ensure that they are stated in accordance with a single set of financial reporting standards. So, for example, a single and internally consistently prepared figure for turnover, cost of sales, interest paid, tangible assets, inventory and trade receivables and payables will all be given in such a statement. This is not what will be produced as a result of the CCCTB aggregation process.

In that process, the starting point would be accounts prepared under potentially quite disparate accounting standards, for reasons already noted above. No attempt is made to adjust for these different bases: the source data is accepted as stated, even if that basis of preparation is potentially inconsistent.

What then happens is that all transactions undertaken and reflected in the separate income statements with other related companies to be included in the CCCTB aggregation would be removed from the accounts, whether as revenue or as an expense. It is obviously true that if inconsistencies are apparent in this process, they will have to be addressed. The CCCTB proposal was not clear as yet on how this might be done.

Finally, the remaining subset of transactions left for each individual entity would be adjusted in accordance with the CCCTB rules to provide an adjusted net income figure that is then aggregated with the similarly adjusted figures for all other such entities to be included in the unitary tax base – even though each such dataset potentially started from accounts prepared on the basis of different, and so inconsistent, financial reporting standards. For this reason it might best be said that technically the CCCTB is not a charge on consolidated profits at all, but on aggregated adjusted realised taxable net income.

Issues arising from the CCCTB approach to profit aggregation

The CCCTB approach to profit aggregation raises some technical issues that are worthy of consideration in the context of developing countries and their potential use of unitary taxation, whether on an individual (federal) state basis, or within a defined region with a number of jurisdictions.

First, and importantly, the CCCTB proposal was based on taxation principles such as consistency, the taxation of realised profits and prudence, which have long been familiar to tax accountants and tax authorities, and which are also popular with taxpayers, because they are seen as the basis for fair corporate taxation. In terms of political acceptability this is significant.

Secondly, by rejecting many of the profit concepts inherent in modern financial reporting standards, and by reverting instead to a transactional basis for assessing what might best be called realised net income, the CCCTB proposal simply walked around many of the conceptual issues and accounting difficulties that cause so many problems when adjusting profits for taxation purposes. This is not to say that problems with regard to income recognition on complex financial transactions, such as derivatives and hedging, cease to exist in this model of taxation. However, it allows such transactions to, in effect, be siloed, based on the idea that each transaction is technically taxable on a net basis in its own right, depending firstly upon it being within the scope of taxation, and secondly upon the existence of allowable offset expenses. This means that each such problem area can then be put into separate and distinct categories, where the issues that they give rise to can be treated in isolation rather than as a subdivision of a whole.

This transactional approach is likely to be pragmatically significant, because it suggests that agreement could be achieved on the creation of a harmonised unitary taxation base for a very broad range of transactions; those that might present difficulty might be separated for consideration at some future point. This could facilitate an alternative basis for apportionment (e.g. a residual profit split basis), to be used as a compromise even prior to the introduction of a full unitary taxation system. In this way, a pathway towards agreement on a broadly based, even if incomplete, unitary taxation base may be possible without requiring unanimity on all points.

Thirdly, and perhaps surprisingly, the aggregation process, whilst inevitably a compromise, may not be as intellectually incoherent as it might first appear. This is precisely because the CCCTB does not aim to create a coherent set of financial statements based upon a unified set of financial reporting standards. There is, instead, the objective of creating a reported aggregate of the subset of transactions that give rise to taxable revenues and tax allowable costs that take place within the financial reporting environment of the various entities that make up the unitary group as a whole. In that case many of the areas where subjective accounting difficulties arise, for example with regard to many disputed aspects of valuation, will simply fall out of consideration because there is no attempt to prepare a balance sheet. In addition, in a great many cases the resulting interactions with the income statement that might arise from these valuations will either fall into the category of unrealised income or expense, and so not be within the subset of transactions considered for the purposes of CCCTB tax base estimation, or may well be eliminated on aggregation. This is, again, not to say that there are no remaining issues, but it is necessary to put them into their true perspective.

This is also the case with regard to the use of differing accounting bases within a single aggregation. In principle this makes no sense, until it is realised that the risk of causing tax distortion is small if steps are taken to ensure that both sides of any transaction undertaken to take advantage of any differences in approach are eliminated from the subset of transactions making up the tax base within the same period. This might suggest that in some key areas a general, or even targeted, anti-avoidance principle specifically addressing this issue, with significant penalties attached, may be necessary.

What is in fact created by this process, if such precautionary measures are taken, is a subset of transactions representing taxable income and expenditure, with significantly lower scope for dispute as to their status for tax purposes than in the financial statements as a whole. This, of course, does not obviate the need for guidance with regard to issues such as income recognition, allowable expenditure, the treatment of capital expenditure and intangible assets. What we are suggesting is that the number of occasions where this guidance will be needed is reduced in the case of a system like the CCCTB, because of the income and expense recognition bases adopted.

A way forward

It seems then that, despite the frequent pessimistic assertions that the CCCTB initiative is floundering, some significant progress was made on its technical foundations. As explained in other chapters in this book, unitary taxation has very obvious merit in tackling some of the inherent weaknesses within the existing international corporate taxation architecture, and yet many obstacles are put in the way of its adoption. In no small part this is because of the desire of politicians to retain what they perceive to be sovereignty over their own taxation systems.

Their perception of the degree of sovereignty they have on this issue may be misplaced: it is impossible for them to control three variables at the same time. These three variables are accounting profit, the tax base and the tax rate. As a matter of fact, at least one of these must be fixed to have any chance of control over the others. Whilst this perception of lost sovereignty over what are considered to be key issues of tax policy as a result of the use of unitary taxation persists, there is little chance of progress toward the goal of its implementation. This issue can, however, we think, be overcome.

We suggest that there is, in fact, a wide range of transactions where agreement on what is and what is not a taxable revenue and allowable expense might be very easily agreed upon by many countries. The vast majority, though not all, of these may well arise before the estimation of what is called EBITDA (earnings before interest, taxation, depreciation and amortisation), a calculation that firms generally make and publish. At this level, we think that definition of accounting profit as adjusted for tax purposes should not be unduly difficult. To put this another way, most disagreements in defining the tax base arise when addressing issues such as what allowance should replace depreciation, how interest and other financial income is recognised for tax purposes, what interest can be offset against taxable profits, and other similar issues, almost all of which do, however, happen to be recorded below the point in the income statement where EBITDA is reported.

As an example, the accounting entry for depreciation in financial statements is almost always removed from consideration for taxation purposes, but what is put in its place can vary between countries. The CCCTB seeks to overcome this problem by the adoption of straight-line depreciation based on very rigid rules, but many countries would have great difficulty with that because they use their capital allowance system as a way of incentivising the location of capital-intensive industry in their jurisdiction. There is, then, an inherent conflict between the adoption of a harmonised unitary taxation base, and the desire of countries to offer incentives for actual expenditure on physical assets within their jurisdiction. Agreement on a unitary taxation base would be much easier if the apportioned tax base excluded depreciation charges, while leaving it open for each country to decide on its own replacement capital allowances.

The same may also be true with regards to, for example, interest expenditure. This is, again, an area where international tax competition occurs. Intra-group finance income and expense within the unitary tax base would, of course, be taken out of consideration in any unitary tax computation (as would all intra-group transactions), but this does not mean that problems with regard to the payment of third-party interest, or of payments of interest to members of the group located in jurisdictions beyond the unitary taxation base, are avoided in any unitary taxation system. Our suggestion is that under a unitary taxation system, whether it be global or in a limited geographic area, the profit to be apportioned should be stated before any interest charge, and that the extent to which any interest deduction is allowed in any jurisdiction for offset against the profits apportioned to it should be a matter for it alone to decide in the first instance, taking international recommendations that now exist into account if it so wishes. We make this suggestion with the deliberate intention of removing disputes on issues such as thin capitalisation from unitary taxation negotiations when such discussions first take place, with the sole purpose of making it easier to achieve some agreement. We suggest that issues such as interest deduction and capital allowances are left as issues to resolve, once experience of the system's use in other areas has been established.

We suggest that this approach to aggregation offers a workable starting point for agreement, and that the practicalities involved in achieving this goal might be regulated by what we would call 'Tax Reporting Standards'. It is our suggestion that such standards would make clear how a unitary profit for apportionment might be defined. We think that this would be most easily achieved if this common aggregated tax base broadly approximated to the EBITDA earned by the group of companies, for the reasons noted in the preceding paragraphs.

We are not, of course, at this juncture suggesting that we have solved the problem of defining a unitary taxation base, or that the approach we recommend is ideal. Instead what we propose is a pragmatic step on the way to a unitary taxation base. But, in conjunction with the work that is reflected in other chapters in this book, involving proposals that appear inherently sound as a basis for resolving many of the current issues within international corporate taxation, what we are suggesting embraces three important issues.

Firstly, we suggest that further work should be done to create Tax Reporting Standards that can provide a consistent, coherent and widely agreed basis for determining an aggregated unitary taxation base. These could be used by a wide range of jurisdictions covering the vast majority of transactions, and the major part of the income of many unitary groups where dispute as to the nature of taxable revenues and deductible expenses may be quite limited. In our view, this is possible if a transactional basis for tax base calculation is adopted.

Secondly, we believe that this approach to accounting opens up a pragmatic basis for the negotiation of a unitary taxation base that could be implemented in stages, and that politically this might represent a significant contribution to debate.

Lastly, and importantly, we think that this process would greatly help to eliminate many potential areas of transfer pricing abuse, many aspects of the impact of accounting arbitrage, and therefore much of the potential for profit shifting, while avoiding the political objections to an overly prescriptive and dogmatic approach to the entire taxation base.

Notes

1. This discussion is mainly of the European Commission's proposal tabled in 2011 (COM(2011) 121/4), which was approved by the parliament in March 2012 with some amendments that are not relevant to the concerns in this paper. The text was then subject to close technical evaluation in the EU Council through its Working Party on Tax Questions, which produced a series of revised 'compromise proposals', some of which significantly changed the Commission's version. These are not discussed here. The Commission is expected to relaunch the proposal with a new text in November 2016.

Chapter 6

Lessons for International Tax Reform from the US State Experience under Formulary Apportionment

Kimberly Clausing

This chapter condenses findings from my recent research, which investigates the experience of US states in taxing corporate income under formulary apportionment (Clausing 2014, 2016a). This enquiry is, of course, relevant to both policymakers in US states and those policymakers in other sub-national jurisdictions that presently employ formulary apportionment. In addition, there are important lessons for possible formulary approaches to taxing the international income of multinational firms.

My work considers two essential questions: (1) How does formulary apportionment of corporate income affect the location of economic activity across US state borders?; and (2) How does formulary apportionment affect US state corporate tax revenue?

This short chapter will summarise that work. In the first section, I will provide background on the rationale for formulary apportionment. Second, I will discuss whether the US state experience is relevant to the international arena. In the third and fourth sections, I will discuss the research strategy of my work and summarise the main results of the paper. Finally, I will discuss the advantages and disadvantages of drawing lessons from the US state experience for international tax reform.

Why formulary apportionment?

In the United States there are many critics – and few, if any, defenders – of the present system of taxing multinational corporations. Critics note that the system collects less revenue as a share of GDP than that collected by peer nations, despite a relatively high statutory tax rate. The system is known for being absurdly complex, and transfer pricing rules are notoriously difficult to comply with, administer and enforce.

Similar dissatisfaction occurs in many countries, set within an environment where multinational firms have become increasingly adept at shifting their income to low-tax destinations, and even creating income that is taxed nowhere. Concerns regarding income shifting and corporate tax base erosion have led to prominent hearings in the US Congress and the UK Parliament, and the issue has been given priority in recent G8 and G20 meetings. The OECD's project on base erosion and profit shifting, and the IMF's policy paper on *Corporate Tax Spillovers* (IMF 2014), are also responding to these concerns.

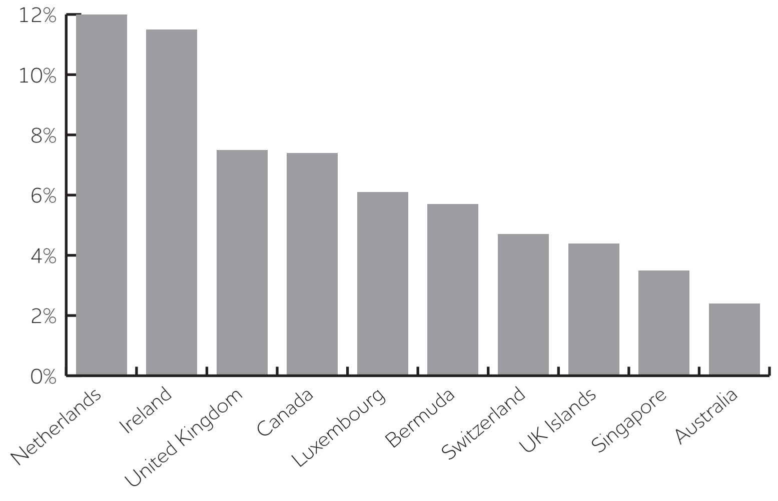
The present system relies on 'separate accounting', and this has both conceptual and practical limitations. Conceptually separate accounting is nonsensical, since it asks integrated firms to account for their costs, revenue and profits as if they were operating at 'arms-length', when the very reason that the integration occurred is because the profits are likely greater than they would be if the entity were separate firms. This generates a residual profit due to the corporations' synergies, or internalisation advantages. Where should these extra profits be assigned? There is no clear conceptual basis for a precise answer to this question.

As a practical matter, the separate accounting framework provides ample opportunity for income shifting from high-tax to low-tax countries, draining revenue from high-tax countries and distorting the organisation of economic activity. These income-shifting incentives are well-documented in an extensive literature; see, for example, reviews by De Mooij (2005) and De Mooij and Ederveen (2008). Indeed, multinational firms have become especially adept in recent years at generating 'stateless income', which is not taxed by any jurisdiction; this problem is described in detail in Kleinbard (2011b).

My own recent work in Clausing (2016b) suggests that, by 2012, profit shifting reduced US corporate tax revenue by $77 billion to $111 billion, and revenue costs likely exceed $100 billion at present. Revenue costs due to profit shifting in other countries without low tax rates are also high, likely exceeding $300 billion at present. Other researchers have found similar magnitudes, including OECD (2015a Action 11), Crivelli *et al*. (2015), Keightley and Stupak (2015), Dowd, Landefeld and Moore (2014), and Zucman (2014, 2015).

For example, in 2011 US Bureau of Economic Analysis data on US-headquartered multinational corporations indicates that 48 per cent of all gross income of US affiliates abroad was booked in just seven tax havens. Figure 6.1 shows the ten countries with the largest share of foreign income; all but three of these countries (UK, Canada and Australia) are havens with effective tax rates on US affiliates under 6.5 per cent. This data indicates a large and continuing problem.

Figure 6.1 **Top ten income countries, by share of total gross income, 2011**



Data is from the US Bureau of Economic Analysis, *Financial and Operating Data for US Multinational Companies*. Available at: www.bea.gov/international/di1usdop.htm.

These problems make formulary apportionment an appealing solution. In particular, multinational corporations would no longer be asked to separately account for their income and expenses in each jurisdiction; instead, they would determine their worldwide profit, and then profits would be apportioned to national jurisdictions by formula.

For example, if a multinational company earned $10 billion worldwide, and 30 per cent of its economic activity (measured by the factors in the formula) occurred in the United States, the US tax base would be $3 billion. While there are legal and accounting issues surrounding the definition of a consolidated business and the measurement of the factors in the formula, a formulary solution still has the potential to be a vast simplification, while dramatically reducing income shifting.[1]

Indeed, this logic is what led US states to first adopt formulary apportionment for assigning US income to individual states. While corporate income tax arose in the early twentieth century, it was not until the middle of the twentieth century that states turned to formulary apportionment, in large part due to the impracticality of separately accounting for income and expenses when businesses are substantially integrated across US states (see Hellerstein and Hellerstein (1998) for a detailed history). Formulary apportionment is also used by other sub-national jurisdictions, including Canadian provinces and Swiss cantons, and is under discussion by the European Union in the proposals for a Common Consolidated Corporate Tax Base (CCCTB), as discussed in Chapter 10 by Siu and others in this collection.

It should also be remembered that separate accounting and formulary apportionment are intellectual ideals on a spectrum of profit allocation methods. There are aspects of commonly-used transfer pricing practices that have formulary elements, and there are possible hybrid options like formulary profit splits. Thus, one can also learn useful things about tendencies under each end of the spectrum that inform possible in-between proposals, as pointed out by Durst and Picciotto in their chapters in this collection.

Finally, one possible confusion should be cleared up immediately. While a formulary approach acts as an implicit tax on the factors in the formula for profitable firms, it is *not equivalent* to a tax on the factors in the formula, typically assets, payroll or sales, as sometimes alleged. Why not? The essential difference is that the tax is proportionate to corporations' worldwide profits, net of deductible expenses. Thus, if a corporation does not earn profits it will not incur tax liability, no matter how large its sales, assets or employment.

Similarly, there are no cascading effects with the sales factor, as there might be with a sales tax. If a firm has a number of steps in its production process, that will generate tax liabilities based on the *profits* due to each step of the production process. Thus, a vertical consolidation of a firm will not affect the resulting tax liability beyond the effect of the different profit apportionment due to the location of the final products' sales.[2]

In sum, formulary apportionment provides a promising way to tax multijurisdictional firms when businesses are integrated across borders. It eliminates most options for income shifting, and bases tax liabilities on plausible measures of economic activity and overall profits. Depending on the details, there is the potential for administrative and compliance costs to be far lower than under the present system. While there are legal and accounting issues to be worked out, some of which are addressed in this collection, formulary solutions seem promising in many respects.

The rest of this chapter considers two important issues that are essential for understanding the *economic* consequences of formula apportionment. First, how does economic activity respond to the tax incentives under formulary apportionment? Second, how does formulary apportionment of corporate income affect government revenue in jurisdictions? These are two essential questions that are frequently on the minds of policymakers as well as academic observers, and thus it is useful to examine the lessons from the US state experience.

Are there useful lessons from US states?

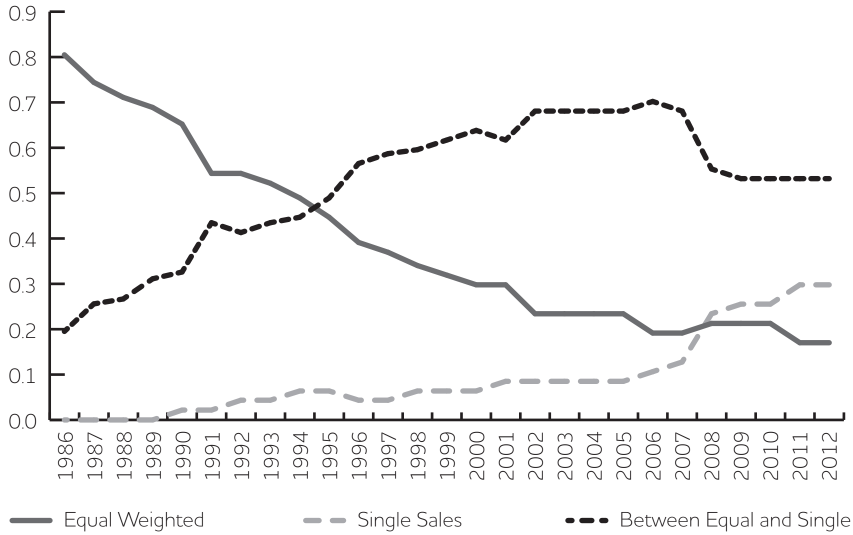
US states have a long experience with formulary apportionment, which they adopted in the middle of the twentieth century to help address the impracticality of taxing corporations that operate in an integrated fashion across US states. At first, most states used a three-factor formula that equally weighted sales, payroll and assets. Thus, a state's tax base would be their total income[3] times the weighted average of the shares of sales, assets and payroll in a particular state. For example, if a corporation had 20 per cent of its sales in Massachusetts, and 50 per cent of its payroll and assets in Massachusetts, then 40 per cent of its total income would be taxable in Massachusetts under an equal-weighted formula (20+50+50 divided by 3).

Over time, many states decided to increase the weight on the sales factor. These decisions often resulted from business lobbying by corporations with large local production, as states feared that businesses might move production elsewhere. For example, if Massachusetts were to shift their formula to a 'single-sales' formula (with a 100 per cent weight on sales), then the corporation in the example above would have 20 per cent of its US income taxable in Massachusetts, lowering its Massachusetts tax burden substantially.

In theory, if all states increased their sales factors and if all sales generated taxable income, overall tax burdens for multi-state firms would be unchanged by these formula changes. In the above case, for example, sales in other states would simply generate more tax liabilities there, and, overall, states can be expected to consume in line with their production (if we ignore interstate borrowing). However, two considerations prevent this outcome. First, not all states choose the same formula. Second, corporations do not have a taxable presence in all states where they have sales. Hence, it is important that apportionment based on sales be accompanied by rules that reapportion income that would otherwise go untaxed. (Throwback rules, one such solution, are discussed further below, and in Chapter 10).

Figure 6.2 shows the evolution of state formulas in recent years, and it demonstrates a dramatic evolution away from equal-weighted formulas and towards formulas with heavier weights on the sales factor.

Figure 6.2 Share of states using different formulas



Note: The figure shows the share of states with a 1/3 weight on sales (equal-weighted formula with sales, assets and payroll), with heavier weights on sales (between equal and single), and with single-factor sales formulas. Data on formulas was compiled from various sources, including *Multistate Corporate Tax Almanac* (1986-1989), *Significant Features of Fiscal Federalism* (1990-1994), *Multistate Corporate Tax Guide* (1995-2000), Commerce Clearing House *State Tax Handbook* (2001-2008), and Commerce Clearing House *Master Multistate Corporate Tax Guide* (2009-2013).

This evolution of formulas shows that state policymakers are not immune from tax-competition pressures under formulary apportionment. They are prone to increase sales factor weights, and they often change other features of the corporate tax base in ways that are advantageous to corporate taxpayers. For example, some states allow choice about the formula weights, or whether firms use combined reporting.

However, some states also take steps to protect their corporate tax base. Many states require combined reporting, limit elective choice, and implement throwback rules. A throwback rule will tax income that is not taxed in other states.

While US states provide a host of relevant evidence regarding taxing corporate income under formulary apportionment, there are also several caveats to bear in mind. First, tax considerations may affect location decisions less in the United States, since US states have lower tax rates than most countries. For the time period analysed in this study, the state corporate tax rate averaged 7 per cent. This is an important consideration, since one would expect a greater responsiveness to taxation at higher tax rates. Tax-motivated behavioural changes are more likely with larger potential tax savings. Second, and also important, US states operate within a common federal system. This helps solve issues regarding the tax base definition, since most states begin with the federal tax base as a starting point.

On the other hand, tax competition pressures among US states *within a common country* are likely more fierce than tax competition pressures *across countries*. For example, it is much easier to move factories and production processes across state lines than across international borders. Also, product price competition is more intense due to a common currency and greater flows of information. These considerations suggest that behavioural responses to tax differences might be enhanced in the sub-national context.

How does formulary apportionment affect the location of formula factors?

Prior studies on this question have found some tax effects on the location of formula factors. These studies include Goolsbee and Mayhew (2000), examining employment responses between 1978 and 1994, Gupta and Hoffman (2003), examining capital expenditure responses between 1983 and 1996, and Klassen and Shackelford (1998), examining sales responses between 1983 and 1991. Goolsbee and Mayhew (2000) find employment responses that they describe as beggar-thy-neighbour, since states that increase sales factor weights gain employment at other states' expense. Gupta and Hoffman (2003) find small capital expenditure responses in their full model, and Klassen and Shackelford (1998) find some sales response for throwback states, although they are only able to utilise cross-section analysis.

The research strategy of the present work is to consider all three types of response, extending the sample period to the years 1986 to 2012, 16-21 years more than the prior studies. This focus on a longer period is essential to capture a great deal of policy experimentation, as well as the longer run effects of changing policies in the context of other state actions. For example, 'first-mover' states may experience different economic consequences from heavy sales weights in their formulas than do states that change their policies later.

In this analysis, tax policy choices regarding formula weights, tax rates and other policy rules are analysed in the context of a full set of controls. My empirical strategy employs panel data techniques that include state fixed effects, not always included in prior research. This allows each state to have a different base level of economic activity. State-level fixed effects are particularly important, since one would not want to attribute economic consequences to corporate tax policy changes that happen to be correlated with other special features of a state. For example, if a state is particularly business-friendly, and that is correlated with a higher sales weight in the formula, one would risk overestimating the effect of formula changes, absent state-level fixed effects.

I also include a full set of controls for the economic structure of the state and the state's macroeconomy, including variables measuring state-level economic growth, unemployment, workforce educational attainment, demographic variables and other controls.

All results are described in detail in the full research paper and are merely summarised here. The most noteworthy result is that all three measures of economic activity (employment, investment and sales) show very little responsiveness to tax burdens. Indeed, tax burdens do *not* have statistically significant effects on levels of economic activity in most specifications. Tax burdens are measured as the multiple of the corporate tax rate and the factor weight in the formula. For example, a state with a 10 per cent tax rate and a 50 per cent weight on sales in the formula would show a tax burden on sales of 5 per cent. Many robustness checks are considered, but all the most ideal specifications show no negative and statistically significant relationships between tax burdens and economic activity.[4] The full implications of these results are discussed below.

How does formulary apportionment affect state corporate tax revenue?

The full research paper also presents an empirical analysis of the determinants of state government corporate tax revenue as a share of Gross State Product (GSP), again controlling for state-level fixed effects as well as other control variables. Policy choices have important effects on revenue. Tax rates are positively and statistically significantly associated with revenue in all specifications. A tax rate one percentage point higher is typically associated with a share of corporate tax revenue in GSP that is about 5 per cent higher.

Higher sales weights typically lower revenue. Typical results imply that moving from an equal-weighted formula to one that double-weights sales will be associated with a share of corporate tax revenue in GSP that is about 2.5 per cent lower. This result suggests that the lost revenue from taxing corporations that are producing in a state but selling their products out-of-state are not compensated for by increased revenue from corporations that are selling in the state. This finding likely results from the fact that many corporations selling in a particular state lack a taxable presence, and thus cannot be subjected to the state's corporate tax. Otherwise, in theory, if a state consumes roughly in line with its production, its revenue should not be adversely affected by a higher sales weight.

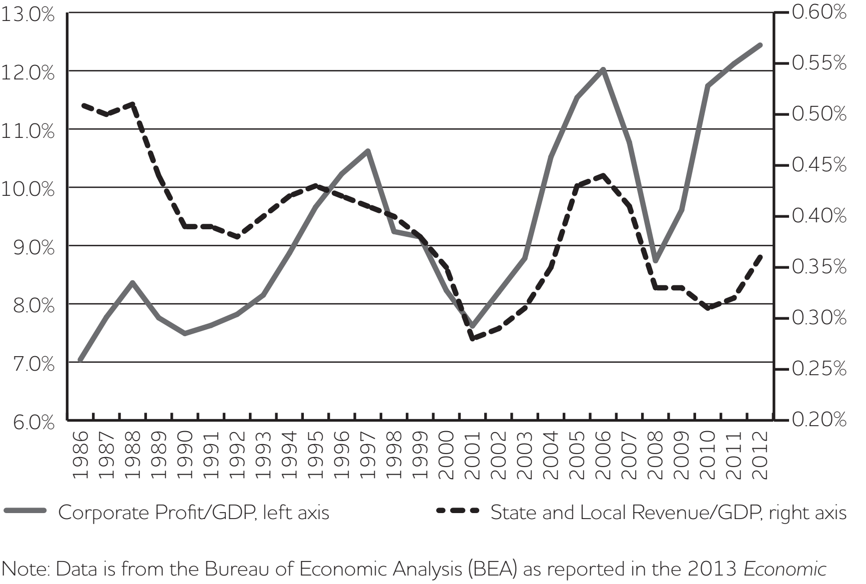
Findings also suggest that US states with throwback rules have higher revenues, but the effects of many other tax policy variables are not estimated precisely. The important revenue results in this analysis are consistent with those in the prior literature that used earlier data sets, most notably Gupta, Moore, Gramlich and Hoffman (2009).

Discussion and policy implications

This analysis studies a time of frequent policy changes, 1986 to 2012. Eight per cent of the data observations show an increase in the sales weight of the formula, and 3 per cent of the observations show a substantial change in the corporate tax rate, providing a useful set of policy experiences for study.

It is also a period of increasing corporate profits and decreasing corporate tax revenue across US states. Figure 6.3 shows corporate profits as a share of GDP for the US as a whole (left axis, solid line), as well as US state and local corporate tax revenues relative to GDP (right axis, dashed line). Over the past quarter century, corporate profits have increased by over five percentage points of GDP; though they fluctuate with the macroeconomy, there is a clear upward trend. State and local corporate tax revenues also fluctuate with the state of the economy, but there is a detectable downward trend over this time period.

Figure 6.3 Corporate profits and state corporate tax revenue as a share of GDP



Note: Data is from the Bureau of Economic Analysis (BEA) as reported in the 2013 *Economic Report of the President*. 2012 data is preliminary; revenue data for 2012 is from the BEA and the Office of Management and Budget.

During this time period, there also may be changes in the dynamics of tax competition. States that were early adopters of higher sales weights may have gained employment at the expense of other states, as shown in Goolsbee and Mayhew (2000). Indeed, if I restrict my sample to the early years of my data, I find results that are more consistent with this finding. However, over the longer time period the tax sensitivity of formula factors fades, and states that increase their sales weights do not attract additional economic activity. Instead, they merely lose revenue.

This changing tax competition dynamic is intuitively appealing; states that increased sales weights early on may attract disproportionate economic activity in comparison with, for example, the thirtieth state to undertake such a policy change; this raises the 'bang for the buck' for early adopters.

This analysis suggests some cautious lessons for international tax reform. First, while there are concerns that the choice of formula factors in apportioning the tax base will affect corporate investment and employment, economic activity does not appear to be sensitive to tax burdens under formulary apportionment, as long as the analysis controls for other considerations that may also affect economic activity. This is encouraging, and it is also consistent with a long literature in public finance that emphasises a *hierarchy* of behavioural response to taxation: timing and financial responses are generally much larger than real behavioural responses.[5]

However, one should be cautious in noting that the US state experience may not translate into the international arena. Nevertheless, there are counter-balancing aspects of this problem. On the one hand, US state tax rates are much lower than those commonly found at the international level, which implies that tax responses may be larger at an international level. On the other hand, tax competition is likely more fierce *within* countries than *between* countries, due to easier goods and factor mobility. This consideration implies that tax responses may be more muted at an international level.

In addition, the experience with corporate tax revenue under formulary apportionment provides some cautionary lessons for corporate tax base protection. Under formulary apportionment, states will have at least a short-run incentive to engage in tax competition with other states by changing formulas and other rules. These considerations, like much else in tax policy, suggests that the details of implementation are important. If a degree of international agreement can be reached on the formula and elements of the tax base, that would ease tax competition pressures. Of course, formula harmonisation would also reduce the possibility of double taxation or double non-taxation due to disparate formulas.[6]

While formulary apportionment is a long way from international adoption, there are still important lessons to be learned from US states regarding how best to implement formulary apportionment in both tax systems that already use formulary methods, and in any possible future tax systems. These lessons can also inform understanding of possible hybrid solutions that rely on methods for profit allocation that have formulary elements.

Notes

1. See Durst (2013e, 2014a) and Chapters 5 and 10 in this collection for discussion of these issues. Mintz and Smart (2004) provide evidence on reduced income shifting under formulary apportionment in Canada. For a more detailed discussion of the advantages and disadvantages of formulary apportionment at an international level, see Avi-Yonah and Clausing (2008). One particularly vexing issue is the possible requirements of treaty modification, which are discussed in work by Avi-Yonah and Benshalom (2010) and in Avi-Yonah's chapter in this collection.
2. As an example, imagine a computer chip manufacturer earns $100 million in profit selling to a downstream computer company that operates in two countries, a low tax country (with a 10% tax) and the US (with a 35% tax). The computer manufacturer also earns $100 million in profit selling to customers in the US (35%) and a medium-tax country (20%). If the two firms integrate, the sales from the chip manufacturer to the computer manufacturer would be disregarded, but there would still be $200 million in profit. The only change would be that the sales weights would change to be based on the computer manufacturer's customers, which (in this simple example) would raise the tax burden on the $50 million of the chip-maker's profits that would have been attributed to the low-tax country from 10% to 20%.
3. Some states later extended this beyond the US to worldwide income, leading to the international controversy in the 1970s discussed in Chapter 10.
4. For reasons previously discussed, it is important to include state (fixed) effects; econometric testing also shows that this is the appropriate specification. However, if state effects are nonetheless excluded, or if very simplistic specifications are used, some results indicate negative effects of tax burdens on economic activity. All results are discussed in more detail in the full research paper.
5. Slemrod and Bakija (2008), Auerbach and Slemrod (1997), and Saez, Slemrod and Giertz (2012) summarise a vast body of research on taxation that suggests this hierarchy of behavioural response.
6. Although, as Michael Durst points out in his chapter in this collection, such concerns may be exaggerated.

Chapter 7

Key Findings from Global Analyses of Multinational Profit Misalignment

Alex Cobham, Petr Janský and Simon Loretz[1]

Summary

This chapter draws on our two studies published by the International Centre for Tax and Development (ICTD), using the two leading datasets on the global activity of multinational enterprises (MNEs). The approaches are complementary but necessarily distinct, given the difference in available data. We summarise the approaches taken, and the specific findings that emerge from each, and then highlight three major common results. First, notwithstanding uncertainty and data issues, this is a first-order problem in relation to the world economy. Second, the overall effect of a switch to unitary taxation, almost regardless of the actual apportionment formulas used, would be a substantial redistribution from MNEs towards most countries of the world. Only a handful of jurisdictions would see significant revenue losses, and these are far outweighed by the gains of all others. Third, there are significant differences in the extent of redistribution implied by a global apportionment approach relying on different factors – with corresponding implications for the development impact of given global choices, and/or for unilateral decisions at regional and national level. Overall, the findings confirm the critical importance of improving the available data. In doing so, they underline the failure of the OECD base erosion and profit shifting (BEPS) process to deliver on commitments in this area, but also highlight the potential of using the newly-required country-by-country reporting data of MNEs. A specific proposal for a data registry is put forward.

Introduction

With the political support of the G8 and G20 groups of countries, the OECD launched its BEPS initiative in 2013, with the specific single aim of reforming international corporate tax rules so that they 'better align rights to tax with economic activity' (OECD 2013: 11). The BEPS process reflected particular political pressures that arose after the 2008 financial crisis, both from public anger about perceived corporate tax avoidance, and from policymaker concern over tax revenue.

In addition, as this volume explores in detail, there are longstanding criticisms of the international rules for corporate taxation that date back to their inception in the inter-war years (Picciotto 2013). Conceptually, the major criticism is that the 'separate accounting' approach flaunts basic economics by treating individual companies within a multinational group as if they were distinct, profit-maximising entities. Practically, the major concern is that a serious misalignment may have emerged between the locations of multinational groups' economic activity, and that of their declared profits.

The BEPS Action Plan, as delivered in late 2015, has been roundly criticised. Many areas of potential progress appear to have stalled due to the resistance of individual OECD members. For example, the UK's defence of the 'patent box' has led to the mechanism's effective codification, and widespread adoption by other states, rather than its elimination. In addition, there has been broad criticism of the minimal inclusion of developing country views (even of those inside the G20, which provided the OECD with its mandate). One element of this has been the perceived failure to consider more radical alternatives to arm's length pricing approaches, including those based on a unitary approach.

A fundamental but less widely recognised concern relates to BEPS Action 11. This committed the OECD to establishing baseline findings for the extent of profit misalignment, in order to understand the scale of the problem and to be able to track the progress of the BEPS initiative over time (OECD 2014d). It proved impossible, despite the efforts of those involved, to obtain sufficient data to produce such a baseline. The outcome document indicates a desire and expectation of being able to work with member governments to access data in future. Commentary from the professional services firm PwC suggests a lack of confidence (emphasis added): 'It appears to us, from action 11 of the BEPS Action Plan, that the OECD has *not yet given up on* continued economic analysis of existing data to determine the scale of BEPS'.

The obstacle that faced the BEPS 11 team was the successful MNE lobbying in Action 13 (on transfer pricing documentation), against the publication of country-by-country reporting data. The new OECD standard, the result of long-term advocacy and campaigning based on the Tax Justice Network's proposal (Murphy 2003), requires MNEs to provide tax authorities with data on the economic activity, profits made and tax paid in each jurisdiction where they operate. By design, the resulting dataset, if collated globally, would track precisely the scale and nature of misalignment between profit and real activity.

At present, such collation – even with confidentiality safeguards by or for the OECD – is not planned. Nor has the OECD been able to bring together equivalent partial data from member states. The result is that the BEPS process lacks any internal baseline against which to monitor progress – and so there can be no clear accountability.

In this context, the work of external researchers on the scale of profit misalignment takes on greater importance. This research may provide the lacking BEPS baseline – albeit on the basis of inevitably imperfect data. In addition, the results provide an indication of the potential impact of adopting unitary approaches, using formulary apportionment to curtail, if not to eliminate outright, specific dimensions of profit misalignment. Our own research has used the two main data sources that are publicly available in order to address these questions.

This chapter is structured as follows. The next section sets out the data, approach and some specific findings of Cobham and Loretz (2014), and the following section does the same for Cobham and Janský (2015). We then highlight the key findings from the two papers, drawing also on related literature to establish the broad state of knowledge of global patterns of profit misalignment, before concluding with a brief discussion of policy opportunities and research horizons.

Results with balance sheet data

In the first study (Cobham and Loretz 2014), we used the leading global balance sheet database, Orbis (Bureau van Dijk), to assess the misalignment between profits and location of activity, and simultaneously to consider the tax base redistribution that would be associated with apportionment according to various formulas that reflect activity more closely.

The paper responds to two different strands of research literature. One strand is mostly concerned with profit shifting out of the US, and investigates how much more tax base would be allocated to the US if they were to extend unitary taxation and formula apportionment to the worldwide income of US-headquartered multinationals. Shackelford and Slemrod (1998) used geographic segmental reporting data, and showed that 46 of the largest US firms would face a 38 per cent increase in their US tax liabilities. Clausing and Lahav (2011) update the analysis of Shackelford and Slemrod, but find only a modest increase of the tax base in the US. While this approach is appealing because it uses consolidated group profits as a starting point, it is highly data-demanding and therefore was only conducted for a small number of companies. Furthermore, segmental reporting does not usually allow identification of the distribution of the apportionment factors in all countries, and hence the two studies are limited to the revenue impacts on the headquarters' economy.

A range of studies have considered the application of formulary apportionment within national borders. Mintz and Smart (2004) find that apportionment between Canadian provinces results in substantially less income shifting. Where Canada has a common formula (based on sales and wages), US states can apply their own factors (see Chapter 10 below). Clausing (2014: 25) assesses the experience in the US, and finds 'some cautious optimism for advocates of international formulary apportionment. Formulary apportionment has the potential to reduce income-shifting incentives without generating accompanying large tax responses in economic activity such as employment and investment'.[3]

A different approach is used in papers addressing the revenue impact of various potential apportionment factors in the context of the EU proposal for a formulary apportionment system, the Common Consolidated Corporate Tax Base (CCCTB). Here the approach is bottom-up, as the information of the subsidiaries is aggregated to obtain the geographical distribution of the profits and the apportionment factors. Fuest, Hemmelgarn and Ramb (2007) use data about German inbound and outbound foreign direct investment (FDI), while Devereux and Loretz (2008) use international data to investigate the same questions. Aside from the higher quality of the German administrative data used by Fuest *et al*. (2007), and the broader coverage in the international data used by Devereux and Loretz (2008), the main difference in approach is that the latter explicitly model the impact of international loss consolidation. Devereux and Loretz (2008) also investigate the impact of the EU's CCCTB proposal.

The core of Cobham and Loretz (2014) is an extension of Devereux and Loretz (2008) to all countries for which equivalent balance sheet data is available. In addition to the apportionment factors proposed by Agúndez-García (2006), we also consider the two-part apportionment discussed in Avi-Yonah *et al*. (2009). This method allocates ordinary profits according to the geographical distribution of operating expenses, and excess profits are then allocated according to additional factors (e.g. assets).

There are three main findings of interest. First, the results clearly establish that it is not currently possible to use balance sheet data for a meaningful *global* analysis of changes to international tax rules. While Orbis in principle covers all firms worldwide, and contains approximately 100 million entries, in practice there is only data on actual activity for a much narrower set. After narrowing the dataset to multinational groups, we have a sample of 322,525 individual corporate entities in 29,984 groups, which is dominated by European companies, and with very little information about developing countries. The core sample, requiring data on the main factors of economic activity (tangible assets, payroll, employee numbers and turnover), contains only 86,000 firms on average, spread across 32 countries.[4] As Table 7.1 shows, these are predominantly European countries.

Table 7.1 Baseline results for different apportionment factors (ORBIS balance sheet data)

Country	No. firms	Sum profit and loss before taxes	% change under unitary taxation, apportioned by						
			Total assets	Tangible assets	Turnover	No. employees	Payroll	Avi-Yonah 1% return	Avi-Yonah 5% return
Austria	1,040	71,153.69	-21.3%	-31.4%	-21.7%	-34.4%	-19.7%	-20.7%	-17.6%
Belgium	4,296	293,037.10	29.7%	-48.6%	-24.8%	-46.5%	-30.1%	24.7%	6.0%
Bosnia Herzegovina	185	442.32	-7.2%	165.9%	17.1%	195.8%	24.0%	-5.7%	1.6%
Bulgaria	491	7,866.76	-19.3%	23.3%	-15.2%	67.4%	-31.7%	-18.8%	-16.1%
Croatia	784	6,741.58	-20.3%	4.8%	-13.1%	10.9%	-17.1%	-20.2%	-19.1%
Czech Republic	3,145	67,705.02	-25.5%	28.4%	-6.5%	31.4%	-26.4%	-24.1%	-18.6%
Denmark	1,365	65,639.08	-19.2%	-27.9%	-23.0%	-24.4%	-18.4%	-19.6%	-21.0%
Estonia	698	6,248.35	-22.1%	7.1%	-13.6%	73.2%	-23.6%	-21.8%	-19.5%
Finland	2,337	63,196.36	-25.6%	-24.5%	-14.9%	-15.6%	-15.4%	-25.1%	-22.7%
France	16,707	752,573.14	-17.5%	-17.3%	-11.8%	-24.8%	-6.8%	-16.8%	-13.8%
Germany	4,480	562,141.18	-24.1%	-30.5%	-14.5%	-23.5%	-12.4%	-23.1%	-18.7%
Hungary	403	16,094.57	-15.7%	26.5%	-6.2%	62.4%	-22.2%	-15.6%	-13.9%
Ireland	702	37,917.33	-12.2%	-17.9%	-18.4%	-44.6%	-48.2%	-13.4%	-16.8%
Italy	8,716	257,083.65	-4.1%	11.2%	11.4%	8.3%	6.3%	-2.9%	2.0%
Japan	1,535	142,926.62	-2.9%	1.9%	-2.0%	-1.2%	-10.8%	-3.9%	-3.7%
Latvia	27	-369.76	51.3%	91.5%	10.1%	116.5%	-4.4%	47.2%	35.4%
Luxembourg	154	47,508.76	-8.4%	-76.5%	-43.4%	-81.2%	-77.2%	-11.8%	-15.5%
Netherlands	775	91,369.11	-26.5%	-44.5%	-32.4%	-62.7%	-61.2%	-26.1%	-23.5%
Norway	3,147	154,679.47	-22.0%	-10.9%	-21.8%	-26.6%	-20.3%	-22.1%	-22.5%
Poland	2,504	67,735.79	-30.7%	33.3%	-5.3%	67.4%	-31.6%	-28.7%	-20.4%
Portugal	1,636	73,624.67	-13.3%	-5.6%	-11.0%	-5.0%	-11.9%	-13.4%	-13.7%
Romania	2,096	23,749.13	-30.5%	49.6%	-7.1%	160.0%	-13.3%	-29.8%	-26.1%
Serbia	839	1,217.25	-17.8%	75.6%	-12.7%	91.0%	5.7%	-18.4%	-19.2%
Slovak Republic	800	23,213.89	-10.3%	32.8%	1.2%	39.4%	-8.9%	-9.9%	-7.6%
Slovenia	192	2,808.68	-16.2%	0.9%	-12.5%	-1.0%	-12.7%	-16.1%	-15.6%
South Korea	793	90,274.47	-18.3%	-1.4%	-13.2%	-6.5%	-25.7%	-18.5%	-18.6%
Spain	9,692	447,315.23	-12.1%	-7.6%	-15.5%	-12.1%	-13.3%	-12.4%	-13.3%
Sweden	2,514	108,766.46	-10.9%	-19.3%	-24.6%	-29.4%	-21.4%	-11.9%	-15.7%
Switzerland	20	1,423.89	6.3%	15.6%	-18.7%	-3.3%	-1.2%	-2.3%	-20.8%
Taiwan	144	106,711.90	-1.5%	-1.6%	-2.0%	-2.1%	-2.9%	-1.6%	-1.9%
Ukraine	807	29,419.52	-39.8%	-1.3%	-19.2%	89.2%	-27.2%	-38.9%	-34.6%
United Kingdom	12,961	966,003.66	-6.2%	-0.5%	-7.0%	0.1%	0.8%	-6.0%	-5.1%
Total	**85,986**	**4,595,884.80**	**-11.7%**	**-11.8%**	**-11.7%**	**-11.8%**	**-11.8%**	**-11.7%**	**-11.1%**

Source: Reproduced from Table 4, Cobham and Loretz (2014).

Notes: No. firms refers to the average (over the period 2003 to 2011) number of firms these results are based on. All countries with less than 10 firms on average in all apportionment factors are excluded. Sum profit and loss refers to the simple sum of profit and loss before taxes and is reported in million USD.

Table 7.2 Results for tax reported, balanced subsample for different apportionment factors (ORBIS balance sheet data)

Country	No. firms	Sum reported tax liabilities	% change under unitary taxation, apportioned by						
			Total assets	Tangible assets	Turnover	No. employees	Payroll	Avi-Yonah 1% return	Avi-Yonah 5% return
Austria	936	17,435.76	-16.7%	-24.4%	-13.2%	-33.6%	-10.5%	-16.1%	-12.6%
Belgium	3,714	35,907.10	145.9%	2.1%	51.6%	0.7%	28.7%	132.3%	90.8%
Bosnia Herzegovina	185	39.41	74.5%	287.5%	94.9%	329.0%	92.0%	75.8%	92.7%
Bulgaria	491	1,093.64	-5.1%	25.7%	-7.6%	65.9%	-28.4%	-6.0%	-7.2%
Croatia	784	1,607.59	-7.4%	19.0%	-0.9%	23.1%	-8.7%	-7.7%	-6.2%
Czech Republic	3,145	13,468.11	-23.5%	23.6%	-7.2%	24.9%	-29.7%	-21.6%	-12.8%
Denmark	1,365	21,051.29	-16.2%	-28.2%	-12.1%	-20.1%	-14.1%	-16.6%	-17.5%
Estonia	533	516.35	-1.5%	14.5%	-6.9%	85.6%	-19.5%	-0.7%	7.3%
Finland	2,122	11,499.48	-13.8%	-13.3%	-6.5%	-7.8%	-7.3%	-13.0%	-7.7%
France	16,706	160,761.14	4.4%	4.5%	12.5%	-2.5%	20.8%	5.9%	12.4%
Germany	4,249	141,524.73	-14.8%	-20.9%	1.5%	-14.6%	-1.1%	-13.1%	-4.4%
Hungary	340	2,045.87	-9.7%	61.4%	15.2%	89.7%	-7.7%	-9.7%	0.2%
Ireland	730	5,277.63	-20.3%	-33.2%	-25.1%	-55.2%	-57.9%	-20.8%	-21.1%
Italy	8,716	138,309.47	-12.2%	-7.3%	-4.6%	-0.1%	-2.1%	-11.1%	-6.1%
Japan	1,535	49,283.03	1.8%	5.6%	0.4%	4.8%	-7.0%	0.3%	2.2%
Latvia	27	40.70	28.0%	46.3%	-10.5%	42.5%	-22.2%	25.0%	16.1%
Luxembourg	142	4,398.86	101.9%	-62.8%	-6.9%	-68.0%	-63.6%	87.0%	63.0%
Netherlands	751	26,917.74	-23.5%	-24.4%	-20.8%	-60.7%	-59.7%	-23.2%	-18.3%
Norway	3,147	55,837.13	-27.1%	-18.1%	-34.4%	-46.8%	-39.4%	-27.2%	-27.6%
Poland	2,311	12,919.87	-33.5%	12.3%	-14.1%	75.3%	-33.7%	-31.0%	-20.3%
Portugal	1,594	13,442.49	-17.2%	-8.1%	-13.5%	-6.2%	-13.5%	-17.4%	-17.1%
Romania	2,096	6,718.75	-29.2%	27.3%	-26.3%	110.4%	-14.8%	-28.7%	-25.5%
Serbia	839	227.88	144.5%	365.5%	113.2%	406.3%	166.4%	140.0%	132.0%
Slovak Republic	800	4,799.56	-14.4%	21.4%	-8.1%	26.9%	-16.8%	-14.0%	-11.1%
Slovenia	158	650.42	-6.9%	15.9%	-3.5%	10.3%	-3.7%	-6.6%	-4.4%
South Korea	701	22,996.31	-14.8%	-2.6%	-12.8%	-6.6%	-21.9%	-14.9%	-13.9%
Spain	9,083	99,009.29	18.6%	23.3%	14.6%	17.9%	16.9%	18.1%	17.3%
Sweden	2,514	19,533.51	6.3%	-2.7%	-6.2%	-11.0%	-2.6%	4.2%	-1.3%
Switzerland	18	213.86	5.6%	29.6%	-34.8%	19.8%	16.6%	-6.8%	-35.7%
Taiwan	144	12,900.70	6.7%	6.6%	6.1%	6.0%	5.0%	6.5%	5.7%
Ukraine	807	10,098.12	-40.5%	-22.8%	-31.8%	21.3%	-35.2%	-39.9%	-36.4%
United Kingdom	11,662	216,528.84	11.6%	17.2%	7.5%	17.1%	19.9%	11.9%	13.7%
Total	**82,345**	**1,107,054.60**	**2.0%**	**0.5%**	**1.8%**	**-0.2%**	**2.3%**	**2.0%**	**4.1%**

Source: Reproduced from Table 5, Cobham and Loretz (2014).

Notes: No. firms refers to the average (over the period 2003-2011) number of firms these results are based on. All countries with less than 10 firms on average in all apportionment factors are excluded. Sum reported tax liabilities refers to the simple sum of the tax liabilities in the accounts and is reported in million USD.

Three aspects of this partial coverage should be of particular concern for any international tax research:

- The effective absence of developing countries means that findings will be distorted, to the extent that companies in developing countries have significantly different characteristics. Most obviously, this means that findings based on Orbis are likely to understate the scale of global problems, if findings such as those of Crivelli *et al*. (2015) are accurate in demonstrating greater relative economic losses in developing countries.
- The effective absence of non-European tax havens and secrecy jurisdictions means that any analysis of profit shifting (such as ours) will be substantially incomplete, and any analysis of elasticities due to the interaction of different CIT regimes is likely to be unreliable (see discussion in Clausing (2015)).
- The grave under-representation of the United States, leading MNE headquarters jurisdiction and a major market for foreign MNEs, casts substantial further doubt on the global applicability of results obtained using Orbis. In this respect at least there is an opportunity to address the gap with Bureau of Economic Analysis (BEA) data, as discussed in the following section.

While Orbis has by a distance the widest coverage of any available balance sheet database, any research findings that rely upon it should not be considered as globally representative (OECD 2015b). Moreover, the expectation should be that the dataset will give rise to systematic biases, and so any research design and interpretation should respond carefully to these.

The second notable result is that international loss consolidation under a unitary tax approach would reduce the total MNE tax base materially, compared to separate accounting, since it would allow international off-setting of losses. Such a change may have a short-run transition effect because of stocks of losses in the respective countries, but also two longer-term effects: the direct effect that more losses are usable immediately, which has a depressing effect on the overall tax base; countered by the fact that losses are more likely to be used immediately so that the stock of losses to be carried forward will be smaller, which has a positive impact on the overall tax base. Which of the two effects dominates depends on the level and the variance of the expected profits.

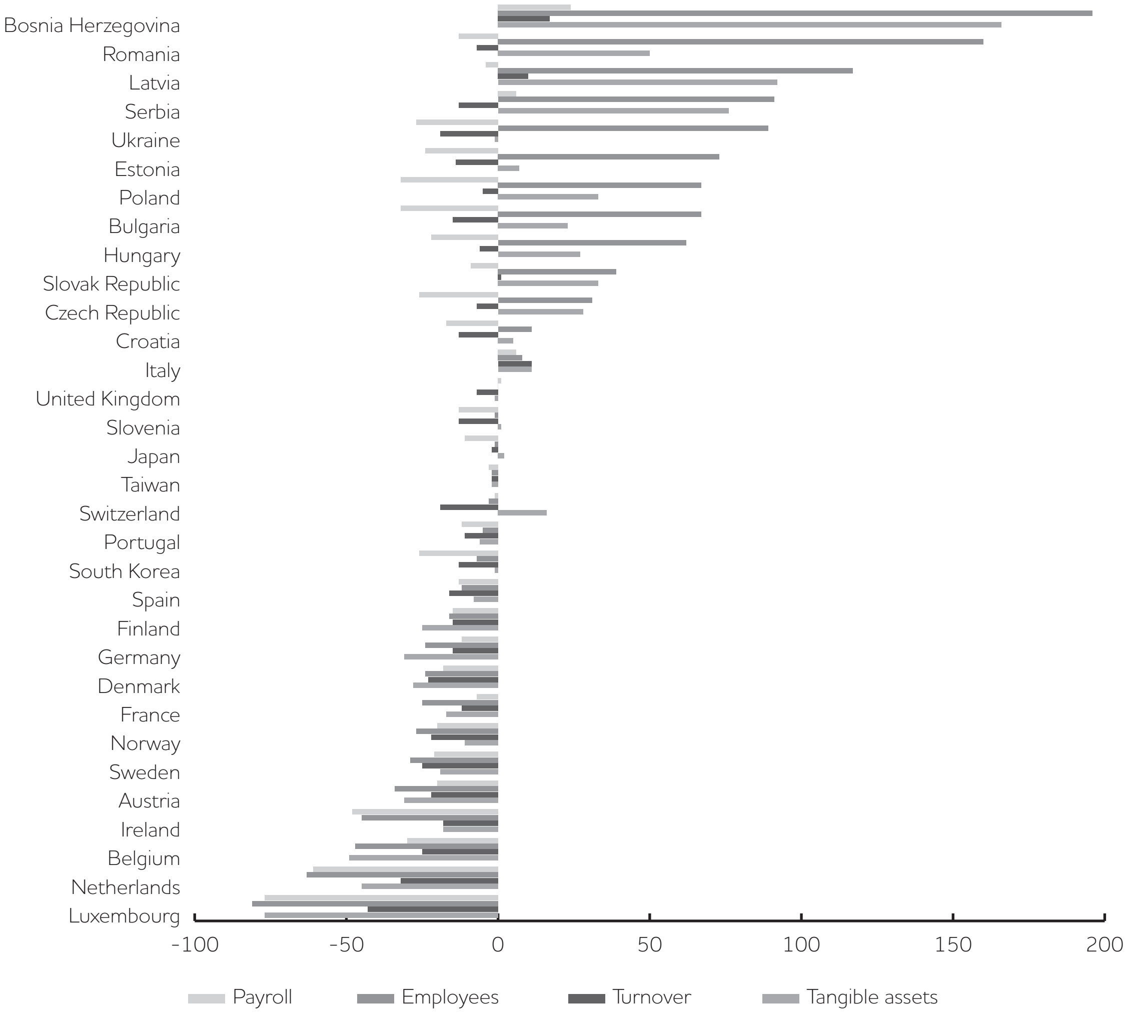
Our sample period of 2003-2011 covers the first major impacts of the global financial crisis that began in 2008, implying larger losses in at least some countries. Overall, Table 7.1 shows an average reduction in the tax base of 11 per cent to 12 per cent. This reflects the freeing up of losses in particular countries if MNEs are able to pool profits and losses globally under a unitary approach, and implies a substantial reduction in the current disincentive to make risky investments in new countries. Overall, however, the reduction in the tax base is offset by the elimination of current opportunities to shift taxable profits from the jurisdictions of real activity to ones with much lower effective tax rates.

The third major finding is just that: a clear pattern of misalignment to the benefit of a small number of profit-haven jurisdictions, and to the detriment above all of the lower-income countries in the sample. Tables 7.1 and 7.2 show the implied changes in the tax base, and in tax revenues, of each country and for profit misalignment according to a variety of potential measures of economic activity. Changes in countries' tax base, if profits were fully aligned with individual measures of economic activity, are summarised in Figure 7.1.

The major losers of tax base, which would see between 20 per cent and 80 per cent of their current tax base eliminated under a switch from separate accounting to direct alignment through formulary apportionment, are Luxembourg, Netherlands, Belgium, Ireland and Austria. Alignment with workforce measures would see potentially very large increases in the tax base of eastern and central European countries, more than doubling in a number of cases. These are, of course, losses of tax base and not of tax revenue, and it is this reattribution of tax base that would produce an overall increase in tax revenue.

While these findings are suggestive, however, we return to stress the first result of this analysis: that the weaknesses of the Orbis, or any other balance sheet database, are so important that any findings made on this basis should be treated with very significant caution. In particular, the absence of most tax havens and developing countries means that the analysis omits what may well be the two extreme groups in terms of the misalignment between profit and real activity. As such, these results may indicate the leading profit-shifting jurisdictions within Europe, but little more. For this reason, we sought and analysed alternative data – the results of which are presented in the following section.

Figure 7.1 Changes in tax base for alignment with main economic activity measures



Source: per Table 7.1.

Finally, note that the sales factor is captured in company accounts on an origin, rather than destination basis. That is, the data reflects the location of the affiliate making sales, rather than the location of the market into which those sales are made – for example, a company booking online sales into the UK market via an Irish subsidiary would record the turnover in Ireland rather than the UK. As a result, the findings here are likely to understate, perhaps substantially, the degree of misalignment of profits in relation to turnover. In addition, the analysis sheds no light on the potential impact of introducing a destination-based sales tax.

Results with MNE survey data

The results summarised in the previous section are for globally-headquartered multinational groups but with limited host country coverage, while Cobham and Janský (2015) use survey data with much broader host country coverage, but for multinational groups from just a single country of headquarters: the United States. The choice of the US is due to the relative ease of data access, but also because of its importance for the global economy – including developing countries.

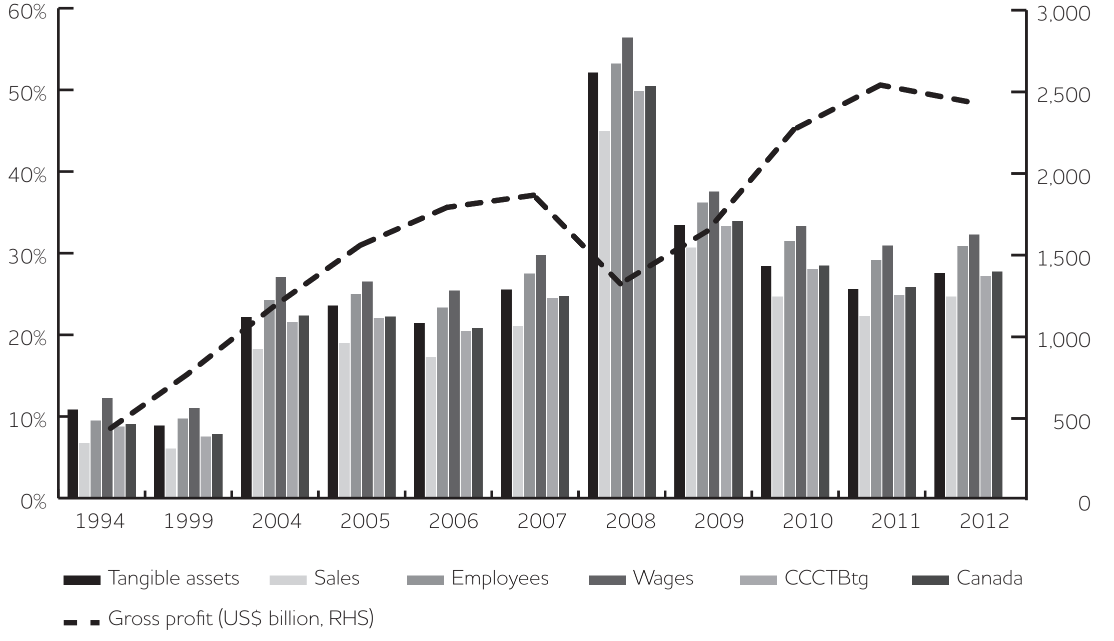
The data used comes from the annual US Direct Investment Abroad survey of all US multinational groups carried out since 1983 by the Bureau of Economic Analysis. The data has been used previously for research. For example, Blonigen, Oldenski and Sly (2014) use the firm-level data to estimate the impact of bilateral tax treaties on investment behaviour of US multinational firms, allowing for differential effects of treaties across sectors that use homogeneous versus differentiated inputs with varying intensity; while Stewart (2014) and Clausing (2012) use the aggregate data to compare effective corporate rates, and shares of total foreign income and employment, respectively. Sullivan (2004) uses the BEA data to highlight a dramatic shift of profits to few jurisdictions, whereas Zucman (2014) employs different data sets to show the same. IMF (2014) uses the BEA data to identify spillover effects in international taxation. Keightley and Stupak (2015) use the BEA as one of their data sources to document the large problem of base erosion and profit shifting in the United States and elsewhere.

Generally, the data includes ownership by a US investor of at least 10 per cent of a foreign entity. Since data on US *parents* are only available for 1994, 1999, and from 2004 to 2012, and since we are interested in the US as well as international impacts, these are the years of data used in our final sample. Although the data is gathered through surveys from individual firms, the publicly-available data is aggregated to country- and/or industry-level. We use the country-level aggregation to explore the pattern of tax at this level. The use of country-level data can lead to biases, for example from effective consolidation of underlying profits and losses, for which unfortunately we cannot control or even estimate a magnitude. Access to firm-level data (currently only provided for approved researchers who are US citizens) could allow future research to assess the implications of these partial aggregations.

Throughout the paper, we limit our findings to individual countries where data is available at the country level, and to one residual group that contains the rest of the world. Unfortunately, the data availability is skewed against lower-income and African countries. When we employ the World Bank's classification according to regions and income groups, valid as of July 2015,[5] there are no low-income countries, six lower-middle income countries (Egypt, Honduras, India, Indonesia, Nigeria and Philippines) and only Egypt, South Africa and Nigeria (with limited data) from Africa with data for 2012 to be included in the presented results. While the data in theory has global coverage, the limited range of US foreign direct investment (FDI) in smaller and lower per capita income economies is likely to give rise to greater data suppression here. The resulting limited availability of data for some groups of countries leads us to present the results for individual countries only, rather than by groups.

Our main measure of misalignment is based on comparison of the current location of the tax base, with that implied by alignment with individual factors of economic activity. Here we put more emphasis on the combinations of factors that are used for formulary apportionment among Canadian provinces (a simple combination of payroll and sales), and in the proposed EU CCCTB (tangible assets, sales and an equal split between payroll and employee numbers). Figure 7.2 shows the sum of excess profits by various measures of economic activity – that is, the total value of US MNEs' additional taxable profits that are 'excess' to activity in the places they are declared. Misalignment by this measure grows over the period from roughly 5-10 per cent of total gross profit in the 1990s, to around 15-25 per cent in the 2000s pre-crisis, through an artificial maximum of around 50 per cent during the sharp profit fall in 2008, and broadly in the range of 25-30 per cent since 2009. In other words, the crisis, and measures taken in the immediate years after it, do not appear to have reversed the sharp growth in misalignment since the 1990s.

Figure 7.2 Extent of global profit misalignment with main economic activity measures



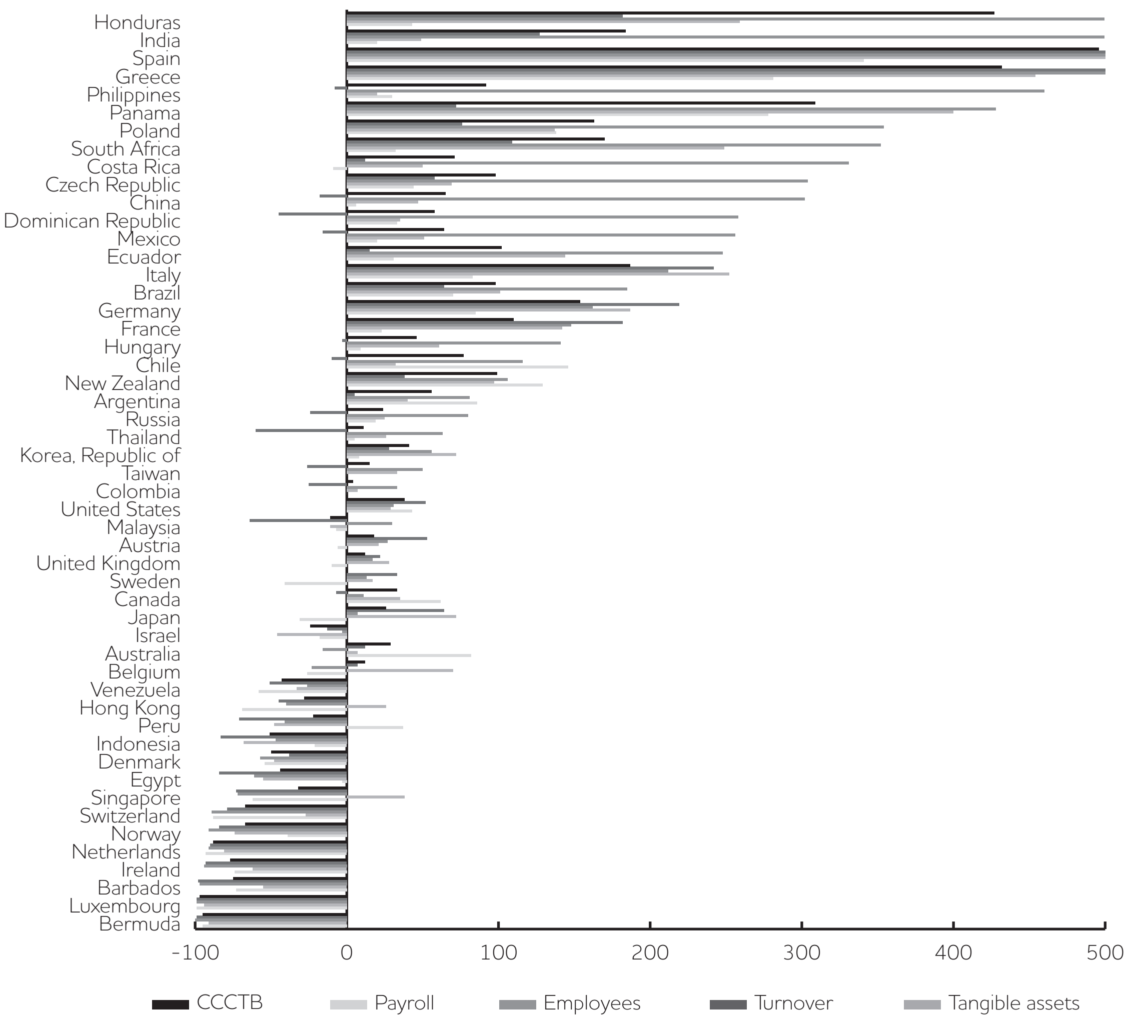
	1994	1999	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tangible assets	10.9%	8.9%	22.2%	23.6%	21.4%	25.6%	52.1%	33.4%	28.4%	25.6%	27.6%
Sales	6.7%	6.1%	18.2%	19%	17.3%	21.1%	44.9%	30.7%	24.7%	22.3%	24.7%
Employees	9.5%	9.8%	24.3%	25%	23.3%	27.5%	53.2%	36.2%	31.5%	29.2%	30.8%
Wages	12.3%	11%	27%	26.5%	25.4%	29.8%	56.4%	37.5%	33.3%	31%	32.3%
CCCTBtg	8.7%	7.5%	21.6%	22%	20.5%	24.5%	49.9%	33.3%	28%	24.9%	27.2%
Canada	9.1%	7.9%	22.3%	22.2%	20.8%	24.7%	50.5%	33.9%	28.5%	25.9%	27.7%
Gross profit (US$ billion, RHS)	395.5	768.5	1185.4	1560.7	1792.6	1867.0	1325.0	1646.6	2268.9	2541.8	2440.8

Source: Figure 3 of Cobham and Janský (2015).

As with the balance sheet findings of Cobham and Loretz (2014), the ranking of misalignments is broadly consistent over time: the greatest misalignment among the most fixed components of activity (wages and employees, followed by tangible assets); the least misalignment among the components with the most easily manipulatable location – sales. The BEA data allows the potential to focus on ultimate location and to exclude related-party transactions, but we use here the most basic measure: sales of foreign affiliates, without limitation in terms of destinations or sales to affiliated firms. This means, again, that the results are likely to understate the degree of misalignment of profit with sales. (Tangible assets become less powerfully misaligned than employees over the sample period.)

Figure 7.3 shows the impact of misalignment by various measures on the tax base of individual countries for the most recent year (2012), and so is equivalent to Figure 7.1 but with survey data on US-headquartered MNEs, rather than balance sheet data on primarily European-headquartered MNEs. We are now able to confirm one major finding of the Orbis data analysis: a clear pattern of misalignment to the benefit of a small number of profit-haven jurisdictions. Again, Luxembourg, Ireland and Netherlands feature strongly. While Belgium and Austria are less prominent, we now add Bermuda, Barbados, Switzerland and Singapore. Where Figure 7.3 highlights the most extreme misalignments in relative terms, Table 7.3 shows the biggest 'excess-profit' and 'missing-profit' jurisdictions, in absolute dollar value.

Figure 7.3 Changes in tax base for alignment with main economic activity measures



Source: Annex I.B of Cobham and Janský (2015).

Table 3 shows the relative scale of the major excess-profit and missing-profit jurisdictions, compared to full alignment with the CCCTB formula. In the former, panel (a) shows that more than a fifth of excess profit cannot be disaggregated from the residual 'Rest of the World' category – jurisdictions that are not fully and individually accounted in the 2012 BEA data. Of the remainder, just four jurisdictions with tax rates of 2 per cent or below account for more than 80 per cent of the misaligned profit: The Netherlands, Ireland, Bermuda and Luxembourg. A further 10 per cent is due to Switzerland and Singapore, which have effective tax rates of around 4 per cent; and an additional 1 per cent of misaligned profits is due to Hong Kong, with an effective tax rate of 9 per cent. This is in line with the existing literature on international profit shifting, which indicates that the corporate tax base is sensitive to tax rate differences across countries (de Mooij and Ederveen 2008). Furthermore, most of these six countries are also important secrecy jurisdictions, providing financial secrecy to other countries (Cobham, Janský and Meinzer 2015).

The other countries identified in the top ten are not recognised in the same category: Norway, Indonesia and Denmark each exhibit effective tax rates over 30 per cent. For the first two, natural resource activity may play a part in inflating the apparent share of gross profit. In the case of Norway, which accounts for the major share, the year 2012 in particular is clearly anomalous with a major jump in gross profits. Further investigation is needed of this and the remaining cases, ideally with company-level data. Note that a similar pattern exists in the Orbis analysis.

Table 7.3 Top ten excess-profit and missing-profit jurisdictions

a. Excess profit

	Additional gross profits, $bn	Percentage of current gross profits	Additional tax payments, $bn	Average effective tax rate	Share of global excess profits	Share of global excess profits (individual countries only)
Rest of the world	-151.2	-78%	-35.5	23%	23%	
1 Netherlands	-151.8	-88%	-3.5	2%	23%	30%
2 Ireland	-93.6	-77%	-2.2	2%	14%	18%
3 Luxembourg	-93.6	-97%	-1.0	1%	14%	18%
4 Bermuda	-76.1	-95%	0.0	0%	11%	15%
5 Switzerland	-38.5	-67%	-1.7	4%	6%	8%
6 Norway	-22.0	-67%	-8.4	38%	3%	4%
7 Singapore	-13.7	-32%	-0.6	4%	2%	3%
8 Indonesia	-7.3	-51%	-2.4	33%	1%	1%
9 Hong Kong	-3.9	-28%	-0.3	9%	1%	1%
10 Denmark	-2.8	-50%	-1.4	51%	0%	1%
Memo: All other individual countries	-9.3	-31%	-2.1	20%	1%	2%

Source: Table 5 in Cobham and Janský (2015). Memo refers to Venezuela, Egypt, Barbados, Israel, Malaysia, Peru and Sweden. Memo values are sums except for percentage of gross profits and tax rate, which are unweighted averages.

b. Missing profit

	Missing gross profits, $bn	Percentage of current gross profits	Missing tax payments, $bn	Average effective tax rate	Share of global missing profits	Share of global missing profits (ex.US)
United States	463.0	38%	84.8	18%	71%	
Germany	25.8	154%	7.1	28%	4%	14%
Canada	23.5	33%	3.0	13%	4%	13%
China	15.0	65%	2.6	17%	2%	8%
Brazil	14.3	98%	3.7	26%	2%	8%
France	13.9	110%	3.7	27%	2%	7%
Mexico	13.7	64%	3.3	24%	2%	7%
India	11.4	184%	3.6	32%	2%	6%
United Kingdom	9.2	12%	1.2	13%	1%	5%
Italy	8.6	187%	4.2	49%	1%	5%
Spain	8.2	496%	4.9	59%	1%	4%
Memo: All other individual countries	41.5	103%	10.4	24%	6%	22%

Source: Table 5 in Cobham and Janský (2015). Memo refers to Australia, Japan, Poland, Chile, Argentina, South Africa, Philippines, Korea Rep., Belgium, Russia, Czech Rep., New Zealand, Hungary, Panama, Thailand, Greece, Honduras, Taiwan, Costa Rica, Austria, Ecuador, Dominican Rep. and Colombia. Memo values are sums except for percentage of gross profits and tax rate, which are unweighted averages.

In panel (b), three features stand out. First, as expected for US-headquartered MNEs, the US is the biggest loser by far, accounting for more than 70 per cent of the total gross profit that is misaligned away from the location of the real economic activity that gave rise to it. Second, the range of major economies is broadly represented – from the BRICs (Brazil, Russia, India and China) to leading OECD countries. Third, the missing profit is in some extreme cases greater than that which remains – by a smaller margin in the cases of India and Germany, for example, and by a factor of four in the case of Spain and some smaller economies.

Key findings, policy opportunities and research horizons

The agreed, single aim of the G20-mandated BEPS Action Plan is to reduce the misalignment between profits and the location of MNEs' real economic activity. A fundamental issue – and the most obvious failing of the OECD in its attempt to deliver that Action Plan – is the absence of a baseline measure of that misalignment. In this chapter, we summarise two papers that examine this baseline.

The first conclusion we may draw is that MNE profit shifting is of *first-order* importance for the world economy. Whether we use the biggest corporate balance sheet database as in Cobham and Loretz (2014), or the survey of US-headquartered MNEs as in Cobham and Janský (2015), we find that for almost all countries, and all measures of economic activity, the implied change in the MNE tax base would be substantial. Overall, the scale of the problem is great – and, hence, so too would be the impact of genuine reforms.

Our preferred spot estimate for shifted profit by US-headquartered MNEs alone uses the European Commission's proposed formula for economic activity, and amounts in 2012 to $660 billion, or 27 per cent of gross profit; or approximately 0.9 per cent of World GDP. The US is responsible for roughly 20 per cent of World FDI, so, depending on the relative scale of profit shifting among non-US MNEs, it is likely that the issue reaches the accounting materiality threshold of 5 per cent in respect of global economic accounts. The estimated revenue loss is roughly $130 billion, which is not immediately inconsistent with the estimate by IMF researchers Crivelli *et al*. (2015), of global revenue losses to MNE profit-shifting of $600 billion annually.

The second conclusion, common to both analyses, is that only a handful of jurisdictions are the destinations of profit shifting. The Netherlands, Ireland and Luxembourg emerge as common excess-profit jurisdictions in both approaches. Belgium and Austria also stand out in the balance sheet analysis, which overstates the role of European MNEs, while Bermuda, Singapore and Switzerland do so for US MNEs. The effective tax rate for those jurisdictions important to US MNEs is 4 per cent or below in every case, and 0 per cent for Bermuda, 1 per cent for

Luxembourg, and 2 per cent for Ireland and the Netherlands. These jurisdictions are therefore central to the tax losses suffered by almost every other country, but themselves receive only a small fraction of tax revenue from these shifted profits.

The big winners are, of course, the MNEs themselves. Note, however, that the providers of equity and debt may not benefit. Recent research (Brooks, Godfrey, Hillenbrand and Money 2016) suggests that, for UK-listed firms at least, a lower effective tax rate does not translate into higher shareholder returns. It does, however, expose shareholders to greater risk. A quite different analysis finds that US banks impose higher interest rates and harsher non-interest terms on firms with a greater degree of tax avoidance – indicating that banks, too, perceive higher associated risks (Hasan, Hoi, Wu and Zhang 2014).

The Orbis data analysis suggests the biggest proportional losses are suffered by lower-income countries in the sample, while higher-income countries are less affected. However, the absence from Orbis of serious data on either developing countries or most tax havens (or financial secrecy jurisdictions) means that these findings are likely to be limited. In particular, the extent of profit shifting is likely to be seriously understated. The picture based on the BEA survey of US MNEs therefore seems more likely to be accurate. While US MNEs may be systematically more or less aggressive than others, it seems reasonable to expect a similar pattern – namely that all countries, bar the profit-shifting jurisdictions, and clearly including the home jurisdiction, lose out substantially. However, given the generally lower tax revenue and higher relative reliance on corporate income tax of lower-income developing countries, a broad distribution of losses is likely to be more costly there. For example, Cobham and Gibson (2016) show that Crivelli *et al.*'s (2015) estimates imply costs of 2-3 per cent of tax revenue for OECD countries, but 6-13 per cent for developing countries.

The third conclusion is that the measures of activity used to measure misalignment, or as the basis for formulary apportionment under unitary taxation, will have powerful implications for the eventual redistribution. In general, the least mobile factors (tangible assets and employment) imply the greatest redistribution under formula apportionment – whereas intangible assets, and to some extent sales, appear themselves to be used as the basis for creating misalignment. However, there is substantial overlap in the redistribution implied by the two combined formulas: the Canadian, combining sales and payroll, and the CCCTB formula.

The broader finding, however, is that the level of understanding possible from existing data is simply insufficient. That insufficiency might be dismissed as just one more dead end for researchers, in a world of data gaps and imperfections. But, for two reasons, that should not happen here. First, as seen in this chapter, the scale of the problem is too great.

Second, the data exists – so it is not a question of calling it into existence, with the associated need for political will, institutional delivery and corporate compliance costs. Instead, it is simply a question of efficiency – for policymakers to reverse the current decision, which stands to waste those imposed costs.

A major success of the BEPS Action Plan was the development of an OECD standard for country-by-country reporting. MNEs will now report to their home tax authorities on this basis, and the information will be shared through a somewhat complicated process with certain other tax authorities. However, BEPS Action 13, through which this was delivered, also ruled out the possibility not only of publishing the data, but even of collating it in one place. Consequently, the BEPS 11 team, dedicated to establishing a baseline to track misalignment, had the rug pulled from under them. As such, the only deliverable was a vague commitment to governments working to provide some data for OECD analysis.

Making country-by-country reporting data publicly available would deliver a range of accountability benefits likely to build public confidence in international tax rules, bolster corporate transparency and hence market efficiency, and discipline the behaviour of aggressive MNEs and profit-shifting jurisdictions. But it would also, of course, provide researchers with the means, finally, to analyse misalignment as a complex global phenomenon.

The simplest means to achieve this would be through an online registry, such as that pioneered by the International Aid Transparency Initiative, allowing a wide range of users simply to record the location of their data in a central place, while hosting it on their own sites in a consistent format. Per Cobham (2014), the likely effect would be to reduce compliance costs below those of the current OECD arrangements – while delivering the (necessarily uncertain level of) benefits outlined.

Notes

1. We are grateful for valuable comments on the underlying papers from Kim Clausing, Carolin Holzmann, Sol Picciotto, James Stewart, Francis Weyzig, two anonymous referees and Daniel Bertossa, Alison Holder, Teresa Marshall, Markus Meinzer, Martina Neuwirth, Tove Ryding, workshop participants at the International Centre for Tax and Development (ICTD), the 70th conference of the International Institute of Public Finance, a Universitat Barcelona/Tax Justice Network conference, a Deutsches Institut für Entwicklungspolitik (German Development Institute) Bonn conference, and seminar participants at the Center for Global Development in Washington DC. We are grateful for support for some of this work from ICTD, which has received funding from the Department for International Development (DFID) and the Norwegian Agency for Development Cooperation (NORAD); and for support to other parts of the work from Oxfam GB and the Center for Global Development. We thank Hendrik Jungmann, Jan Hloušek and Alice Lépissier for excellent research assistance.
2. PwC, 'BEPS Action Plan: Action 11 – Data and methodologies', accessed June 2016. Available at www.pwc.com/gx/en/services/tax/tax-policy-administration/beps/data-and-methodologies.html.
3. These findings are summarised in Chapter 6.
4. NB. Cobham and Loretz (2014) also provide results for individual factors of economic activity, which allow a somewhat larger sample and wider country coverage. The main results presented here reflect the core sample, i.e. only those countries with a minimum of ten firms reporting data across the range of factors. Results based on less restrictive criteria should be treated, correspondingly, as having a higher degree of uncertainty.
5. Each year the World Bank revises analytical classification of the world's economies based on estimates of gross national income (GNI) per capita for the previous year. As of 1 July 2015, low-income economies are defined as those with a GNI per capita, calculated using the World Bank Atlas method, of $1,045 or less in 2014; middle-income economies are those with a GNI per capita of more than $1,045 but less than $12,736; high-income economies are those with a GNI per capita of $12,736 or more. Lower-middle-income and upper-middle-income economies are separated at a GNI per capita of $4,125.

Chapter 8

Unitary Taxation of the Finance Sector

Kerrie Sadiq

This chapter details and summarises a longer companion paper explaining the significance of multinational financial institutions (MNFIs) to developing nations, and how unitary taxation could be applied to this sector. MNFIs play a significant role in financing the activities of their clients in developing nations. Because of the fiscal impact associated with such activities, this chapter investigates a case for an MNFI industry-specific adoption of unitary taxation with formulary apportionment as a viable alternative to the current regime. In doing so, it considers the practicalities by examining both definitional issues and possible formulas for MNFIs. This chapter argues that, while there would be implementation difficulties to overcome, the current domestic models of formulary apportionment provide important guidance as to how the unitary business and business activities of MNFIs should be defined, as well as the factors that should be included in an allocation formula, along with the appropriate weighting. This chapter concludes that unitary taxation with formulary apportionment is a viable industry-specific alternative for MNFIs.

Introduction

Multinational financial institutions are the intermediaries that facilitate foreign investment. By financing primary activities such as mining, tourism and manufacturing, it is also their own activities that affect the economies of developing nations. Often the finance and banking industry is not considered a primary participant in the economic growth of developing nations. However, its influence on that growth cannot be underestimated. MNFIs are following clients into locations where there is significant growth. Therefore, MNFIs are themselves taxpayers that are entering the markets of developing nations and profiting from their strong growth rates.

This chapter, drawing heavily on longer companion papers (Sadiq 2014, 2015), explains the significance of MNFIs for developing nations, and argues a case for industry-specific adoption of unitary taxation based on formulary apportionment. Specifically, this chapter analyses the effects of a unitary taxation approach on the allocation of the profits of MNFIs to the developing nations in which the profits are earned. It examines the practicalities of the implementation of unitary taxation for MNFIs in terms of the key components of such a regime. It considers how the financial sector should be defined for the purposes of unitary taxation, and what would constitute a unitary business for that sector. Available data from existing domestic unitary tax regimes, proposed regimes and current practices in relation to advance pricing agreements (APAs) for global trading is then analysed to consider an appropriate allocation formula for the purpose of apportionment of the profits of the MNFI. The effect of the different variations of the predominant three-factor formula of assets-labour-sales is also discussed.

Unitary taxation with formulary apportionment is concluded to be a viable industry-specific solution to a fair and equitable allocation of the profits of MNFIs. A two-factor equally-weighted formula of sales and labour is suggested to be the most appropriate formula to apply. Agreement on the definitional and practical implementation issues is also suggested as possible.

The impact of MNFIs on developing nations

A primary reason for the globalisation of financial institutions is that they typically follow the customer into jurisdictions where international capital and international investors are required. Global growth is currently being experienced in developing nations, hence MNFIs are following their customers into those countries. The role that MNFIs play in the global economy and national tax systems by facilitating foreign investment is widely acknowledged (OECD 2009). It is also recognised that MNFIs not only have clients that use complex structured finance transactions to benefit from tax arrangements, but may also receive tax benefits themselves from such transactions and structures. MNFIs are also persistent users of tax havens (ActionAid 2013), and previous studies have demonstrated that MNFIs have significant opportunities for reducing their tax liability by way of intra-firm transfer pricing (Demirguc-Kunt and Huizinga 2001).

The ability of MNFIs to take advantage of current tax laws is due to the nature of their business. MNFIs do not provide traditional goods and services, but rather are continually innovating and developing new ways to provide services to clients. The role of the MNFI is different from the traditional multinational enterprise, as it acts as an intermediary between capital users and capital suppliers. The activities of MNFIs are not constrained in the same way as traditional multinational corporations that have physical ties to a geographical location. Further, there is the economic interdependence of the parts of the MNFI entity. This means that MNFIs are so highly integrated that, especially when economies of scope and scale are taken into account, the entity cannot be treated as if it were just a collection of independent entities. Put simply, because of their unique nature (Sadiq 2008, 2007), MNFIs are particularly able to use techniques of base erosion and profit shifting (BEPS) to attribute profits to low-tax jurisdictions in which they maintain affiliates that have few or no employees.

IMF researchers have recently recognised the significance of the expansion of MNFIs into developing nations (Claessen and Van Horen 2012). In particular, Claessen and Van Horen find that between 1995-2009 the number of foreign banks increased by approximately 40 per cent in OECD and high-income countries, by 72 per cent in emerging markets, and by 122 per cent in developing countries. They also find that banks are responding to the economic slowdown in advanced countries and the increased economic importance of emerging markets, with growth opportunities and profit margins likely to be higher in those markets. Given the significant impact of MNFIs on developing nations, coupled with their ability to take advantage of existing tax laws, this chapter proposes unitary taxation with formulary apportionment as a viable alternative.

Definitional issues

If unitary taxation with formulary apportionment is to be adopted for the MNFI industry, the definition of the unitary business and unitary business activities needs to be established. What constitutes the unitary business group, and the income to which the formula will be applied, is a precursor to any apportionment.

The multinational bank is the most obvious MNFI, as it includes a wide variety of activities, such as currency trading, participation in the Euromarket, borrowing and lending, and the financing of international trade. The MNFI sector also includes insurance companies, mortgage companies, investment and pension funds, stock brokerages and investment advisory services (Carter 2013). However, continual growth and change means that the MNFI industry is evolving, and it is impossible to predict the type of financial activities that will be undertaken and entities that will undertake them in the future (Williams 2002). Financial services are increasingly being supplied by a broader category of financial institutions, as well as non-traditional providers. To ensure that all providers whose business is predominantly that of providing financial services are subject to the same international tax regime, a wide, principles-based definition would be required.

Those parts of the business of the financial institution that are considered part of the MNFI for unitary taxation purposes also need to be defined. This definition focuses on the parts of the MNFI that are to be included in the unitary business (the scope of the group), and the activities of the MNFI that are to be subject to unitary taxation (the scope of the business activities). A wide definition of both the scope of the unitary business and the unitary business activities is the most appropriate to ensure that the potential advantages of unitary taxation for developing countries are not limited. However, from a practical perspective this is a more difficult approach to adopt.

The MNFI legal and allocational organisational structure may take on several different forms. Allocational structure (allocating duties, responsibilities and authority) can be done based on geographic, functional or divisional lines. The legal structure will determine the unitary group and will vary, with the regulations of host nations often affecting the final structure. Broadly, there are eight legal organisational structures in financial services: correspondent banking, representative offices, agencies, consortium banks, merchant bank subsidiaries, Edge Act Corporations, bank branches and bank subsidiaries (Williams 2002), falling into three broad categories – branch, subsidiary and agent. A branch is not a separate legal entity, and will generally be engaged in the same type of business as the entity of which it forms part. Determining whether other legal structures fall within the scope of the unitary business of the MNFI will be more difficult. Legal unity and economic unity are two approaches that have developed to determine whether separately-incorporated affiliates are part of the unitary group. The first defines the unitary business by reference to legal control, whereas the second defines the unitary group by reference to common economic activities. Both approaches have their own difficulties, the most obvious being that the legal approach may be open to manipulation, while the economic integration approach leads to uncertainty and practical difficulties in its application.

Finally, the scope of the unitary MNFI needs to be considered. Two issues arise: first, whether the income should include both business and non-business income, and, second, whether the income should be subject to the formulary apportionment regime on an activity-by-activity basis. It has historically been difficult to distinguish between business and non-business income, with different jurisdictions having different rules for doing so. This would be exacerbated in the finance industry, given the highly complex structures and transactions entered into. As such, allowing MNFIs to distinguish between business and non-business income would most likely lead to aggressive tax planning practices whereby developing nations would lose out. The ability to reclassify business income as passive income would likely be easily achieved by MNFIs. Hence, all income should ideally be included.

A formula may be applied to the global income of the MNFI or the combined income of certain activities of the MNFI, known as the activity-by-activity approach. The activity-by-activity approach would be relatively easy to implement, because MNFIs have fairly delineated retail, commercial and investment banking activities, along with separate global trading activities. However, such an approach would run counter to the principle of unitary taxation, which is based on understanding that the activities carried out by an integrated firm are interdependent, and its profits derive from their synergies. For developing countries, in particular, it is likely to result in them being allocated relatively low levels of profit resulting from activities such as retail banking. Hence, a combined income approach is one that more accurately captures all the activities of an MNFI globally.

A formula for MNFIs

The question to be addressed is whether a standard formula should be used for MNFIs, or a formula should be adopted that is specific to that industry. Several working examples provide insight. These models allow an evaluation of both general and industry-specific formulas, the various factors to be incorporated into a formula, and the appropriate weightings.

Existing formulas

Existing formulas are discussed in Chapter 9. As such, this section focuses on those situations where countries have separate formulas for the finance industry. The Canadian rules are an example of a system that provides for nine industry-specific formulas, all of which maintain two factors (sales and payroll). Variations apply to the banking industry, as well as trust and loans corporations. While a two-factor formula is retained for banks, the split is varied to one-third payroll and two-thirds loans and deposits. For trust and loans corporations, the special provisions relate to the definition of gross revenue of the permanent establishment – that is, the amount of the sales component. It is argued that the Canadian system represents a balanced compromise between uniformity and coordination, and provincial flexibility, meets the criteria of fairness, and has relatively low compliance costs (Mayer 2006).

The German model for allocating trade tax is another example of a jurisdiction that contains industry-specific rules. Its system does not apportion the income amongst the taxing authorities, but rather apportions the tax. Trade tax, with a tax base consisting of trade proceeds so defined, is apportioned amongst those municipalities in which a permanent establishment is maintained. The formula applied to the basic tax amount is a single factor of salary and wages, on the basis that this represents the cost of trade activities. Historically, there have been two instances of industry-specific formulas, with one being the banking, insurance and loan industry. For this industry, until 1974 a single-factor formula of gross receipts was used, with receipts attributed to the permanent establishment where the main business activities were located. It has been suggested that the German system operates satisfactorily, and that 'the system effectively prevents double taxation and the results are generally acceptable both for the taxpayers and the affected municipalities. However, the conditions for applying group taxation are very strict, and the only flexibility the municipalities enjoy is that of determining the rate of assessment' (Mayer 2006: 3.4.2).

With 26 cantons applying different formulas, and different formulas applying to different industries, the Swiss tax system is complicated, and allows for substantial independence of the Swiss cantons from the federal state. However, in the case of banks the direct method of apportionment is generally applied, thereby reverting back to a separate accounting approach. The outcome of such a complex and canton-specific approach is that a body of case law has been developed to deal with the constitutional requirement that prohibits double taxation, and to determine appropriate allocation principles.

The EU Common Consolidated Corporate Tax Base (CCCTB) proposal (European Commission 2011) adopts a three-factor equally-weighted formula comprising labour, assets and sales. However, in contrast to previous examples, the labour factor is computed on the basis of payroll and the number of employees, with each counting for half of the labour factor. The CCCTB proposal also includes special apportionment, or modification, rules for financial institutions. Generally, intangibles and financial assets are excluded from the formula due to their mobile nature and the risk of circumventing the system. However, where the entity is a financial institution 10 per cent of the value of financial assets is included, except for participating interests and own shares. Such a modification is seen as necessary because of the significance of these assets to MNFIs. The sales factor is also varied from the general definition to include 10 per cent of its revenue in the form of interest, fees, commissions and revenue from securities – amounts that would normally be excluded. Financial services are deemed to be carried out, in the case of a secured loan, in the member state in which the security is situated, or, if this member state cannot be identified, the member state in which the security is registered. Other financial services are deemed to be carried out in the member state of the borrower or of the person who pays fees, commissions or other revenue.

Internationally, of course, arm's length pricing methodologies are generally applied. Interestingly, it is in the finance sector that a unitary approach, combined with what is essentially formulary apportionment, has been applied in relation to global trading. This was developed by the US, and formulated in the Inland Revenue Service (IRS) Notice 94-40, *Global Trading Advance Pricing Agreements* (IRS 1994). This document contains the experience and generic information relating to APAs applied to the specific business segment of global trading of financial products. The application of Notice 94-40 is limited to 'global trading operations of companies that are functionally fully integrated [and] are characterized by the centralized management of risk and personnel. The business is managed as one global position for purposes of risk management rather than several discrete businesses' (IRS 1994: 3). In relation to such operations, the IRS has for over 20 years used a Profit Split Method of allocating income between the taxing jurisdictions, stating that this method 'reflects the contribution of each trading location to the profitability of the global book' (IRS 1994: 5). The factors used in global trading APAs are heavily weighted towards payroll, with very little emphasis on sales. Further, while it has not been possible to determine the weighting placed on the factors used in actual cases, it is unlikely that the risk factor is significant. It is also notable that these have been agreed with the other countries concerned, as bilateral or multilateral APAs.

Payroll, property and sales factors defined

Any factor used in a formula must be defined. Here, the three most common factors of payroll, property and sales are revisited with the aim of defining each, explaining the rationale for each, and outlining the likely issues that would arise and the impact on developing nations if they were used in an industry-specific formula for MNFIs.

The payroll factor, generally defined as total employee compensation including salaries, commissions and bonuses, is included to reflect the contribution of labour to the generation of the income of the entity. There are two significant issues in relation to the payroll factor that would impact on developing nations. First, compensation is generally much lower in developing countries than it is in developed countries. As such, there is an argument that the factor should take into account the number of employees rather than remuneration. However, it should also be borne in mind that a heavy weight to the labour factor would also discourage employment in a particular jurisdiction. The proposed EU model combines both payroll and number of employees, by equally weighting the two within the labour factor. A model that places equal weight on remuneration and number of staff is likely to be more suited to MNFIs, given the high salary and bonuses paid to some staff as compared to others who undertake simple retail activities. A second problem of outsourcing labour functions needs to be considered, as the payroll factor does not generally include independent contractors. In the context of MNFIs payroll will be an important factor, especially given it is the most difficult to manipulate. However, to ensure an accurate reflection of the cost of labour to MNFIs, there should be no distinction between employees and independent contractors (Benshalom 2008).

The property (asset) factor is included in some formulas on the basis that capital is an important income-producing factor. However, property is also the most complex item to define and value – for example, whether historical cost or market value should be used. In relation to intangibles, there is a major problem of allocation to the relevant jurisdictions. Hence, intangibles may be removed from the property factor, as is often done in the US and in the CCCTB. The property factor may also be omitted altogether, as in Canada. Where a property factor is used in the US, a different definition is generally applied for financial institutions, and, as Martens-Weiner explains, ‘the property factor may also include intangible property, such as coin and currency, loans related to in-state property and credit card receivables if the fees and charges are billed to the state' (Martens-Weiner 2006: 56). This is also consistent with the approach of the proposed EU CCCTB. While the formula itself does not change, the definition of property does vary to include an amount of 10 per cent of the value of financial assets.

In my view, the property factor should not be included in an industry-specific formula for MNFIs. The ultimate purpose of an allocation formula is to allocate profits in a manner that accurately reflects the location of the activities that give rise to the profits of the MNFI. This is achieved by using labour and sales factors in the formula, and the property factor contributes nothing additional to the allocation model. No doubt capital is a significant part of the MNFI's operations, and, given various international and domestic standards required of financial institutions, it may be easy to measure. However, these standards may not apply to all financial institutions, domestic capital requirements will vary across jurisdictions, and compliance may be a matter of form rather than an indication of the substantive use of the funds. Due to the difficulties associated with the property factor, along with a move away from its use in domestic jurisdictions, it seems that the most appropriate approach would be to avoid the use of this factor in an industry-specific formula for MNFIs. This is especially in light of the significant intangible assets held by MNFIs, and the ability to manipulate this factor easily. Property is already indirectly represented in the formula, as property will be associated with the place of labour and potentially sales. As such, a property factor is likely to add little to the ability of a formula to allocate the profits fairly.

The sales factor is generally viewed as a relatively easy factor to measure. However, under the US model the financial institutions industry is subject to special rules in defining sales. This is because the financial sector generates receipts that are not easily analogous to sales income (Roin 2008). In particular, the sales factor is replaced with a receipts factor, and 'may include income from securities and money market instruments, interest income from loans secured by personal property in the state, and receipts from credit cards if regularly billed in the state' (Martens-Weiner 2006: 56).

It can also be difficult to identify the location of sales. A formula for MNFIs must ensure that the sales revenue is allocated to the appropriate geographic location. The sale of intangible goods and services, especially intermediary services such as those performed by MNFIs, poses the biggest problem. The use of a destination-based sales factor also needs to align with a jurisdiction's taxing connections in order to avoid income being allocated to a jurisdiction that has no taxing rights over that income. In the case of MNFIs, there is also the incentive to finalise contracts in low tax jurisdictions (and, more likely, tax havens). One solution to this problem is to adopt an 'ultimate destination' test to determine where the services are ultimately used, thereby applying a tracing rule. Retail services to individuals would readily lend themselves to such an approach – however corporate clients would pose significant problems, given their ability to establish subsidiaries anywhere (Benshalom 2008). In these cases, ultimate destination tracing would be problematic and, from a practical perspective, the compliance costs and complexities associated with such an approach would lead to resistance.

Given the role that MNFIs play in developing nations, as well as their follow-the-customer motivation for entering those nations, applying a destination-based sales factor is consistent with the economic substance of MNFI transactions. MNFIs are operating on business incentives, and, as such, there is inelasticity in ultimate destination-based sales (Morse 2010). This also reduces the impact of any property and payroll factors, allowing nations to encourage investment and employment in the jurisdiction. As Clausing and Avi-Yonah explain, 'the key advantage of a sales-based formula is that sales are far less responsive to tax differences across markets, because the customers themselves are far less mobile than are firm assets or employment. Even in a high-tax country, firms still have an incentive to sell as much as possible' (Clausing and Avi-Yonah 2007: 12).

However, identifying the destination principle may be done in different ways – for example, according to the location where the services are performed, or alternatively the location of the customer. Whichever approach is adopted could influence the location of the activities of MNFIs, and, if there is an emphasis on the location of the customer, this may be considered closer to an origin-based approach, particularly where the customers are also encouraged to operate in low-tax jurisdictions. The location of consumption (e.g. where the money borrowed is actually used for the purposes of financing) overcomes this issue, but poses significant problems (Morse 2010). In a similar manner to some US states in relation to intangible property, where the location of the income-producing activity can be identified, the receipts can be assigned to that location. However, situations may arise where it is not possible to identify a specific location, and in that case it may be necessary to remove those receipts from the sales factor (Martens-Weiner 2006). The proposed EU CCCTB model adopts a pragmatic approach for financial services, and specifies for a secured loan the location of the security (or its place of registration), and for other services the location of the borrower, or the person paying the relevant fee or commission; if these locations cannot be identified, the labour and asset factors should be used.

A formula designed for MNFIs

Any formula, whether general or industry-specific, needs to be equitable and efficient, as well as politically acceptable to both developed and developing nations. Unitary taxation with formulary apportionment only works to the extent that the factors of the formula allocate income based on an economically-sound basis. Fairness requires different allocation factors to be taken into account, and a balanced weighting applied to those factors that results in a distribution of income according to what is viewed as sensible (Martens-Weiner 2006). Generally, factors such as the location of offices, people and sales should be used in the formula with a weighting that minimises distortions. Some argue that each nation has an incentive to place greater emphasis on the factors that maximise taxable income in its jurisdiction (Green 1993). However, as pointed out above and in Chapter 2, countries also take into account the effects on investment, and indeed this has in practice been a dominant consideration in the negotiation of taxing rights in tax treaties. It would be essential to ensure that developing countries are given equal standing in any negotiations, as they may be disadvantaged where emphasis is placed on such factors as labour and capital that have lower costs in developing counties (Casanegra de Jantscher 2000). Ultimately, much of the argument will centre on country bias, dependent on whether consumption factors or destination factors produce the best result, and depending on what the majority can agree on. Developing nations will be wise to argue for greater emphasis on a destination-based sales factor, which reflects consumption, on the basis that it is those nations where the market is located – that is, where the economic activity giving rise to the profits is located. To avoid distortions, minimise complexity and lessen opportunities for aggressive tax planning, all key elements of the system, apart from tax rates, should be consistent within and across countries (McLure 2002). However, it cannot be assumed that the same formula should be applied to all industries, and, as we have seen with domestic regimes, financial institutions are one industry where there has either been a variation on the standard formula or a special industry-specific formula.

Generally, the tendency in existing regimes has been for fewer factors to be used, with a resulting combination of factor/s at origin (assets and payroll) and factor/s at destination (sales) making up the adopted formulas. The recommendations in this chapter are consistent with this observation, as the discussion above supports the view that an equally-weighted two-factor formula of labour and sales for MNFIs is arguably the most likely to be broadly accepted, as well as meet the criteria of fairness and equity. An origin-based labour factor and a destination-based sales factor is the most appropriate for MNFIs. The biggest difficulty will be the sales factor, and, as Avi-Yonah, Clausing and Durst explain, determining the location for sale of certain services such as financial services 'will require toleration of some degree of reasonable estimation and generally will require some restraint in enforcement. In addition, owing to the wide range of situations in which sales can arise, regulations will need to be detailed, and a rulings process will be needed to provide flexibility for particularly difficult situations' (Avi-Yonah *et al*. 2009: 518). The same authors also propose statutory language to account for this scenario, and suggest that 'It is anticipated that regulations will provide that revenues for the provision of banking, insurance, brokerage, or other financial services will be treated as earned by the related party that is resident for income tax purposes in the country in which such revenues can be identified, with reasonable certainty in view of the records and other information available to the taxpayer, with services provided to individuals resident, property located, or active business activities conducted within that country' (Avi-Yonah *et al*. 2009: 543).

Conclusion

The behaviour of MNFIs, as taxpayers profiting from the growth of developing nations, needs to be addressed. These MNFIs are earning profits from transactions and clients in developing nations, but not paying appropriate taxes on those profits. Unitary taxation with formulary apportionment provides a viable industry-specific solution to ensuring that profits are taxed in the location where they are earned. A successful formulary apportionment model makes the use of aggressive tax planning strategies worthless, as there is no longer the opportunity to have income sourced within that jurisdiction unless factors in the formula are present. The model proposed in this chapter is an equally-weighted two-factor formula of labour and sales, where labour reflects both remuneration and number of staff. Ideally, this formula should be applied to all the income of the MNFI (broadly defined) on a combined income basis.

Chapter 9

Unitary Taxation in the Extractive Industry Sector

Erika Dayle Siu, Sol Picciotto, Jack Mintz and Akilagpa Sawyerr

Introduction

This chapter assesses the global unitary taxation approach as applied to taxation of the extractive industry (EI) sector. Governments of resource-rich countries that own extractive resource deposits rely substantially on resource revenue from the extractive industry to fund their public services. Considerable research and policy debate is now attempting to improve the design of taxation, particularly of mining and hydrocarbons (see e.g. Daniel, Keen and Macpherson 2010). The EI sector is generally dominated by large multinational enterprises (MNEs). The policy prescription currently favoured for developing countries is a combination of corporate income tax (CIT), rent resource tax (RRT) and ad valorem royalty (IMF 2012: 26). Both CIT and other profit-related EI levies, such as the RRT, pose similar problems in relation to the opportunities for what is now described as base erosion and profit shifting (BEPS). Two important countries operating systems of unitary taxation (UT) with formulary apportionment, Canada and the USA, include states or provinces with major revenue from the EI sector, especially oil and gas. Yet, to date there has not been much analysis of how a UT approach would apply, in particular to the taxation of the EI sector.

This chapter assesses whether a unitary approach can improve the ability of governments to formulate and administer optimally-designed tax and royalty policies for the EI sector. We suggest that there are three reasons it could do so. First, UT could assist governments to improve general CIT design and develop better EI levies. In addition, the use of UT based on a common global corporate group tax base for transnational corporations (TNCs) in the EI sector could reduce administration and compliance costs associated with both CIT and rent/profit-related EI levies.

Second, the development of new transparency rules will result in the reporting of payments to governments by EIs. This includes not only the wider G20 initiatives to improve transparency through country-by-country reporting, but the more specific sectoral experience under the Extractive Industries Transparency Initiative (EITI), implemented in over 40 countries as of this writing, as well as recent legislation in the EU and US, which require public reporting. Public information on tax payments will sharpen the focus on whether countries are receiving appropriate revenue from EIs. To the extent that governments, under pressure from public opinion, feel that insufficient revenue is being raised, they may gravitate to less efficient forms of taxation that discourage investment in their jurisdiction. A UT approach, which enables countries to share global revenue, could assist in the development of better EI levy policies that are sensitive to the risks and costs incurred by private companies in extracting resources.

Third, better-designed levies reduce fiscal distortions affecting EI investments. TNCs invest until the return is sufficient to cover the cost of capital including depreciation, inventory cost and risk. A unitary approach to rent/profit-related EI levies, which results in governments sharing not only the profits but also the risks associated with long-term capital-intensive projects, could be efficient in design and easier to audit with fewer distortions, thereby maximising the rents shared by the government and private producers.

Our fuller discussion of these issues follows below. The first section provides background on issues related to EI fiscal levies. The next sections look at how the UT approach as developed in Canada and the US is applied to the EI. Following that, we will consider whether and how a global UT approach could improve the economic efficiency, administrability and fairness of CIT and rent/profit-related levies imposed on the EI.

Background on fiscal regimes in the extractive sector

The exploitation of natural resources, especially extraction of oil, gas and hard minerals, is key to the economic development of many developing countries. Indeed, it has been central to their integration into the global capitalist economy. Large foreign-owned firms, often vertically-integrated, dominate natural resource extraction. However, local small-scale miners continue to exist in some countries, especially in hard minerals, although they often find it hard to survive competing in a sector that is capital-intensive and has important economies of scale. Where they do continue, they may range from truly artisanal (usually alluvial) mining, to operations using increasingly sophisticated machinery, generally with small-scale foreign financing and technical leadership, and apparently making more than a decent living, while remaining sometimes illegal and generally outside the tax net.[1]

Hence, revenue is generally the primary benefit for host countries from exploitation of natural resources. Expectations have been high, especially in periods of relatively high world prices that help drive new investment and improved exploration technology. Yet the experience in many developing countries has been that government revenue from EI levies has been disappointingly low. Attention has focused especially on profit-based levies, and some have criticised the shift towards such taxes and away from volume-based levies.[2]

Establishing an effective framework for fair taxation of the profits of large foreign-owned TNCs, which generally dominate the EI sector, has been especially challenging for smaller developing countries. A particular issue of concern is the widely-accepted separate entity principle. That is, for the purposes of taxes on income or profits, the affiliates of a TNC in different countries should be treated as if they were independent entities dealing at arm's length.

Complex governance and opacity

EIs entail large up-front investments resulting in sunk costs, for exploration, development, and setting up mining or drilling sites. The level of such investments has indeed been rising fast, as exploitation has shifted to less easily-extracted deposits. Concessions are therefore often major projects, generally governed by detailed contracts between firms and investors with the government (OpenOil 2012; OpenOil, Revenue Watch and Vale Columbia Centre 2013). Special rights or privileges may be given to the investors under these contracts, or in national mining/petroleum laws, such as exemption from import duties for equipment, special depreciation rules, or 'standstill/stability clauses', which restrict the effects of subsequent changes in legislation, including taxation.

Bilateral investment treaties give foreign investors rights that can override national law, especially the prohibition of 'takings', and the obligation to give fair and equitable treatment, which may be interpreted to restrict actions such as denial of tax exemptions or imposition of new or exceptional taxes. This has led to complex legal provisions to handle this interaction (Wälde and Kolo 2008), but there have been a number of international arbitration claims in relation to taxation, especially in the EI sector (Transnational Institute 2016). These contractual governance structures, national laws and regulations, as well as international treaties, form a complex regulatory web, and the resulting legal interactions can be surprising and contradictory. Also, the ad hoc nature of concession contracts and other structural features of EI investment make this sector particularly prone to corruption.

An important response has been the development of transparency obligations, in the form of country-by-country reporting (CbCR). The EITI has established a global standard for disclosure of company payments and government receipts, governed by a multi-stakeholder model.[3] This has now inspired formal legal requirements in the US and the EU. The Dodd-Frank Act introduced an obligation for any company subject to Securities and Exchange Commission filing requirements to report on a country-by-country basis any payments made to government or public agencies in connection with development of oil, gas or mineral reserves, by project and business segment.[4] Meanwhile, the EU

Accounting and Transparency Directive was approved in July 2013,[5] which will require reporting (for financial years after 2016), by companies formed in the EU involved in oil, gas, minerals or logging of natural forests, of payments made to each government and per project.

These specific provisions for CbCR in the EI sector will apply in parallel with the more general arrangements developed as part of the OECD BEPS project for CbCR and transfer pricing documentation.[6] A significant difference is that the specific EI regulations aim at public disclosure, whereas the OECD envisions disclosure only to tax authorities. However, the information to be included in the CbCR tax-reporting template is more extensive. The introduction of CbCR will have a major impact on TNC taxation. In the EI sector, where it has been spreading for some time due to the EITI, this impact is already becoming evident. The increased transparency resulting from EITI reporting has greatly contributed to the heightened public awareness and debate mentioned above.

EI taxes and their treatment under international tax rules

Governments raise resource revenue through a variety of EI levies, including CIT, severance (or resource) taxes, royalties, bonus bids (payments on contract signing) or production bonuses (payments at certain levels of production), as well as rental payments, each of which affects incentives for private producers to invest in the jurisdiction. Royalties, severance taxes and production bonuses are *ex post* payments, and may be volume-based, revenue-based (*ad valorem*) or rent/profit-related, and are payments made by companies to governments for the right of extracting resources. Bonus bids or rental payments are *ex ante* payments for the property right to explore for a resource.

Fiscal regimes for the extractives sector are distinctive in that, in addition to the usual CIT on business profits, states generally seek to tax the rent from natural resource extraction through levies, such as royalties and severance (or resource) taxes. Economic rent (sometimes called super-normal profit) is defined as the excess of revenue over the costs of discovery, development and production, less a normal return to capital. Depending on the choice of base, each type of EI levy captures varying amounts of economic rent. Rent-based levies are specifically designed to capture economic rent, distinguishing it from other volume-, revenue- or profit-based levies. In particular, they provide an explicit or implicit deduction for the full cost of financing, including the imputed cost of equity financing and full loss offsetting, whereas a profit-based levy typically does not include the cost of equity financing (Chen and Mintz 2012). Revenue-based or *ad valorem* levies take account of market prices, but they do not explicitly incorporate costs into the base. Nevertheless, a case can be made for a price-based royalty (Clausing and Durst 2015). Finally, volume-based levies are assessed on production output, and do not explicitly incorporate costs or market prices. In early stages of exploration and production, a rent-based levy will generate much lower or negative returns, which may be carried forward under a Resource Rent Tax or be refundable under an R-based cash flow tax (IMF 2012: 32-33). However, once all economic costs are covered, rent-based taxes can be expected to produce significantly higher revenue than volume-, revenue- or profit-based levies.[7]

Although revenue- and (especially) volume-based levies are considered to be less precise instruments in capturing economic rent, there may be an inherent tension between the risk preference of the government and the private producer. This preference for risk will affect the timing of payout. Generally, governments with a low risk preference prefer earlier and continuous payout, and the private producer prefers payout at a later time after all economic costs have been covered. Hence, even though rent-based levies are more effective at capturing economic rents, governments with lower risk tolerance may prefer *ex ante* payments, such as bonus bids or rental payments, as well as *ex post* payments, such as volume-based or revenue-based levies. Another advantage of these types of levies is that they are relatively easy to administer, since they do not require accounting of costs (or prices in the case of volume-based levies and *ex ante* payments).

However, volume-based levies (and revenue-base levies to some extent) used in isolation may have negative consequences for governments. First, because both levies disregard costs they may discourage investment, usually in the form of large upfront outlays for exploration, drilling, and construction of extraction and production facilities. Secondly, use of volume-based levies alone may result in less than optimal levels of rent at times of high prices. Given that revenue in the EI sector is notoriously volatile due to fluctuating commodity prices, capturing revenue on the upswing would be a distinct advantage for a government. Hence, such levies should be used in combination with other instruments that more precisely capture rent, and also such levies should be set at a relatively low rate so as not to discourage investment from private producers. By choosing a suitable mix of EI levies, a country may be able to optimise the advantages of each type.

The choice of EI tax structure should also take account of the international tax implications. Formally, a country is only bound by international tax rules to the extent that it is party to treaties embodying them. Many developing countries have few such treaties. They may nevertheless be affected by international tax rules in two main ways. First, their governments may be advised of the desirability of abiding by international tax norms, at least in general terms, to meet investor expectations. Secondly, recognition of the compatibility of a tax with international tax rules may have important implications. In particular, it may enable the MNE to claim a credit for tax paid, rather than treating it merely as a deductible expense, either under a treaty or a unilateral foreign tax credit (McIntyre 2006; McLure, Mintz and Zodrow 2014). A credit is usually more beneficial to the company than expensing the payment (in any case, eligibility for credit usually allows the company to choose), so profit-based taxes are less likely to deter inward investment.

Rent/profit-related levies directly pose the issue of compliance with international tax rules – especially the separate entity-arm's length principle, which requires the tax authority to assess the profits of the local affiliate by starting from its own accounts, and adjust intra-firm transaction prices using accepted transfer pricing methods. Related party transactions on the cost side may include intra-firm charges for joint costs, such as management fees and technical services, and royalties for intellectual property rights. The latter have become increasingly significant, as technology has become more important for EIs. Other problems include pricing of equipment transferred from related parties. On the revenue side, any revenue-based levy poses the problem of pricing sales of the product at the well head or pit mouth, since observed prices are at a market to which the product must be transported.

However, in the case of a vertically-integrated firm such sales will be to affiliates, and the firm's revenue will ultimately come from sales of refined or processed products to third parties. The intra-firm contract price must therefore be evaluated against a suitable benchmark. This poses fewer problems than for manufacturing firms, since raw material commodities are more widely-traded, and world market price benchmarks exist for some types of resource, such as crude oil and many minerals. Such benchmarks have been used by some developing countries as a basis for transfer price adjustments, notably in Argentina's so-called Sixth Method. However, they cannot be used directly without adjustments, especially for the quality of the specific product involved and its location. The BEPS project reports included revisions of the *Transfer Pricing Guidelines* regarding these adjustments, which essentially assimilated the Sixth Method to the arm's length principle.[8] Even with adjustments, such prices may not reflect the real value to the company (Charlet, Laporte and Rota-Graziosi 2013). Some parts of the EI sector are so dominated by large firms that market prices do not exist, or are clearly unsuitable. For minerals such prices are often for refined product and require complex 'netback' calculations to arrive at appropriate export prices (IMF 2012: 30).

Even a slight variation may make a big difference to profitability. This variation is further magnified if the same benchmark is used for both revenue-based and profit-based levies, due to the high marginal rate resulting from accumulation. Finally, probably most significant for rent/profit-related levies in the EI sector is dealing with the opportunities for tax avoidance through financial engineering, since the high level of investment involved means that financing terms are very significant. Also, specific financial techniques are available for EIs, notably the use of derivatives, which can be designed to attribute losses to affiliates in high-tax countries and profits to those in low-tax jurisdictions (Aarsnes 2011).

Applying a unitary approach to EIs

The analysis above indicates that, unlike in other sectors, it is to some extent possible in EIs to avoid the problems posed by international tax rules by greater reliance on non-profit-based levies. However, economic analysis suggests that such taxes are sub-optimal for capturing the highest level of economic rent. However, for CIT and other profit-related levies, the related-party transaction issues have created difficulties. Hence, it is important to evaluate how far, and in what ways, the adoption of a UT approach to aggregation and apportionment of the tax base could enhance the design and administration of such profit-related levies.

UT approaches define the tax base by aggregating income from a corporate unit, and then apportioning the tax base among the relevant jurisdictions through a formula. A formula is used as an approximation of the source of the income based on the location of economic value-creating activities, such as investment in labour and capital assets as well as gross revenue. In applying a UT approach, the scope of tax base aggregation should be clarified, as it will be greatly affected by the treatment of expenses such as overheads, transportation and intra-firm services, and capital costs, such as depreciation and inventory.

We now turn to an examination of select UT approaches as currently applied to EI sectors in the Canadian and US subnational formulary apportionment systems. Each will be examined in regard to the individual levies, their corresponding bases, the scope of tax base aggregation and apportionment formulas. Finally, based on these case studies, we conclude with an evaluation of the advantages and disadvantages of such approaches for the EI sector, with a focus on their potential application to EI sectors in developing countries.

Case studies in the Canadian and US formulary apportionment systems

There is considerable experience of a UT approach at the subnational level in Canada and the US, which are major natural resource producers. In the US there is greater variety, due to the lack of a comprehensive tax harmonisation law among the states (see Chapter 10). For example, for CIT in the oil, gas and pipelines sector, Alaska requires aggregation of all the income and expenses of the entities that comprise a worldwide unitary business, and apportionment through a special formula that takes into account the amount of resource extracted. Moreover, a combined report of worldwide activities of the unitary business is required in a taxpayer's annual filing. At the provincial level in Canada, income earned from corporations with permanent establishments in more than one jurisdiction is subject to allocation through a two-factor formula, comprised of gross revenue and payroll. However, there is no aggregation of the tax base beyond the legal entity level (in other words, no consolidation of corporate groups). Although there is diversity in royalty and CIT rates among the resource-producing provinces, the CIT base and allocation formula for the extractive industry follow the general rules set for other industries. The following sections describe these systems in more detail.

Extractive industries and provincial taxation in Canada

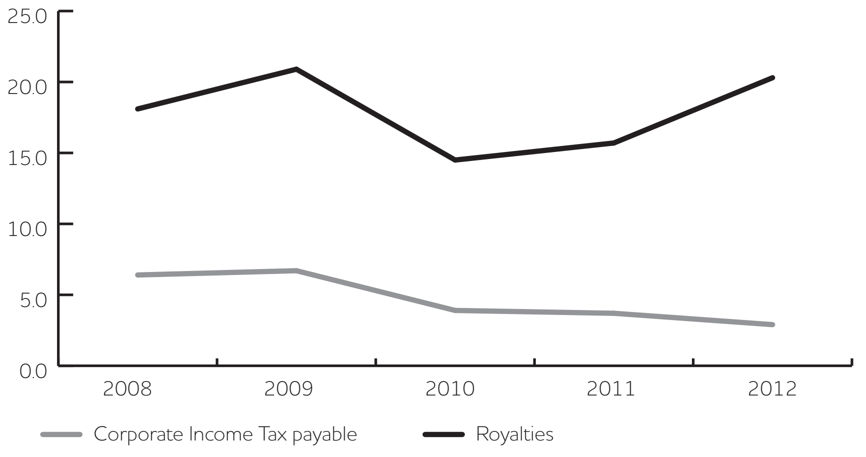
Extractive industries are subject to both CIT and royalties at provincial level. CIT in each province follows the federal base in determining revenue and costs. The provincial royalties are mostly profit-based in Canada – except for conventional oil and gas, which historically began as a well-by-well royalty on sales. In Alberta's revenue-based royalty system, royalty rates vary by the volume and price for each well, which is a rough manner to account for costs that are not deductible from the base. With the development of non-conventional oil and gas projects, provincial governments have in recent years resorted to profit-based or rent-based regimes applied on large projects or at the firm level.

Mining royalties in Canada have historically been based on profits. In earlier years, provinces applied royalties on gross profit (no deduction was provided for borrowing costs), and capital costs were depreciated. To encourage processing, the provinces provided a generous deduction for processing capital costs. In the 1980s, British Columbia introduced a cash flow mining tax, whereby capital expenditure is expensed against mining income or carried forward, indexed at a government bond rate to preserve the value of the deduction written off future income. The Alberta government, with respect to oil sand developments, also adopted this cash flow approach to the British Columbia mining tax.

In Canada, the main levies on resource rents are provincial royalties and bonus bids, which is consistent with provincial ownership of resources under the Canadian constitution. Corporate income tax levies are smaller than royalties, in part because corporate tax policy is focussed, at least in principle, on a neutral treatment of different activities, especially following the proposals of the 1997 federal Technical Committee on Taxation, which recommended the removal of special preferences for certain industries, along with corporate rate reductions.

Figure 9.1 Comparing royalties and CIT payable by Canadian extractive resource industry, 2008-2012

(CAD$ billion)



Source: Authors' estimate based on Statistic Canada data and Canadian provincial budgets, various years.

Canada's CIT allocation formula has been an important part of its overall approach to tax harmonisation. Provinces initially operated their own corporate income taxes, with income allocated to the province according to location of headquarters, with a tax credit provided for any taxes paid in other provinces (Smith 1976). Under the 1942 Tax Rental Agreements, gross receipts were initially used to divide income of a permanent establishment operating across provincial boundaries (Weiner 2005). With new tax rental agreements after the Second World War (1947-52), the allocation principles became even more important to businesses, as Quebec and Ontario wished to levy independent corporate taxes. In 1946 the provinces adopted a common approach based on two factors: payroll and gross receipts.

Canada considered the use of capital as a factor, as in the Massachusetts formula in the US. However, it was felt that a three-factor approach would allocate more revenue to the dominant manufacturing provinces (Ontario and Quebec), and less to the Atlantic and western provinces, since the sales factor was based on consumer purchases (destination-based), as opposed to production (origin-based) (Canada 1997: para. 11.10). However, in later years resource-rich provinces became concerned that the formula resulted in too little profit allocated to them, given that the destination-based sales factor resulted in the allocation of resource profits to consuming provinces like Quebec and Ontario. However, given that difficult negotiations over the common formula take place in a zero-sum game, the formula has not been changed.

The common two-factor approach in Canada has not changed in 70 years. As outlined in Chapter 10, its virtue is that the provinces agree to a common formula, unlike in the United States. It has resulted in lower compliance and administrative costs, as well as fewer economic distortions. However, because Canada does not have corporate group taxation, businesses could avoid allocating revenue across jurisdictions by setting up separate entities in each province, subject to separate accounting rules. Businesses thus have some discretion to avoid allocation if it helps reduce tax payments.[9] Nonetheless, in 1997 about 45 per cent of corporate taxable income was allocated across provinces, with roughly half non-allocated income being represented by small corporate businesses (Canada 1997: para. 11.9).

The Canadian allocation approach begins with identifying whether there are permanent establishments operating in more than one province. A permanent establishment is a fixed place of business, which includes an oil well, farm or mine. The corporation is regarded as resident where its principal place of business is located. The offshore areas (continental shelf) are treated as part of the provinces of Newfoundland & Labrador and Nova Scotia. As discussed in Chapter 10, the general formula requires the company's domestic income to be allocated to each province according to an equally-weighted sum of the share of payroll and gross revenue by province.

However, income earned by mining and oil and gas companies is allocated in accordance with the general formula. Extractive industries in Canada are therefore treated similarly to other industries with respect to extraction, refining or processing, and retail operations. The income is allocated across provinces according to the payroll and gross revenue shares. If separate subsidiaries are established for different operations, allocation only applies to those subsidiaries with permanent establishments in various industries.

As for provincial royalties, the corporate income allocation rules are irrelevant in the sense that income or sales are typically measured on a project or well basis, and administered by energy or mining departments at the provincial level.

Extractive industries and state taxation in the US

The US constitution governs federal and state laws, and the federal and state governments share taxation powers, except for customs duties. Within these bounds, the states levy both direct and indirect taxes according to their constitutions, laws and regulations. In all US states, mineral resources are either owned by the federal government, the state government or by private persons. Generally, the landowner owns the right to subsurface minerals, unless the title has been previously severed. However, in some US states, such as Louisiana, the state retains title to all land beneath water.

For federally-owned lands, such as the National Petroleum Reserve in Alaska and the offshore Gulf of Mexico, oil and gas leases are obtained through auction, after which a royalty applies to 12.5 per cent of the value of onshore production, and 16.67 per cent of the value of offshore production. Coal mining on federal lands is subject to a 12.5 per cent royalty on gross value for surface mining, and 8 per cent royalty on gross value for subsurface mining, while non-fuel mining operations are exempt from federal royalties. There is also a federal excise tax assessed on coal production at 4.4 per cent of the sales price.

Under current federal CIT laws, there are various tax preferences for domestic oil, gas and coal production. The US also has an elective loss transfer system for federal CIT, which allows consolidation of the tax base of subsidiaries in a corporate group in which the parent owns, directly or indirectly, at least 80 per cent of the total voting power and value of the stock. As a result profits can offset losses from various projects, as well as from up/downstream activities within the corporate group.

As explained in Chapter 10, there is no comprehensive federal harmonisation law for state taxation. Hence each state has a different extractives policy, and a variation of severance and corporate income tax laws. The states collect royalties (usually 12.5 per cent but increasingly higher, up to 18.75 per cent depending on extractive capacity) from oil, gas and coal extraction on state-owned lands. In all the US states where land is privately-held, extractives royalties are payable to the owner of the mineral interest. Some states have minimum royalty statutes, which typically follow the 12.5 per cent royalty of the federal government, but in many cases there is no statutory minimum. In addition to these royalties, states generally assess two additional levies: a CIT or franchise tax, and a severance tax. However, Alaska is unique in that its CIT is assessed under a global unitary approach for the oil, gas and pipelines sector.

Alaska oil, gas and pipelines sector

The state of Alaska is a leading oil-producing state, with over 190 million barrels produced annually.[10] Companies in the extractives industry of Alaska are subject to three primary levies in addition to municipal property taxes: royalty payments, severance taxes and corporate income tax. The statutory minimum for royalty payments for oil and gas extraction on state-owned lands is 12.5 per cent. Special taxes/charges for the oil and gas sector include the Oil and Gas Petroleum Production Tax (PPT); the Oil and Gas Property Tax, at the rate of 2 per cent of the market value of exploration, production and pipeline production property in the state; and Oil Conservation Charges, totalling 5¢ per barrel produced in the state.

From 2014, the PPT was set at 35 per cent of net value of production (or production tax value) in the state. The net value of production is determined by the gross value at point of production, less deductions for lease expenditure and adjustments to lease expenditure. Gross value at the point of production includes a deduction for the actual costs of transportation. Lease expenditure is then subtracted from the gross value. Lease expenditure includes ordinary and necessary direct costs upstream of the point of production, and overhead expenses for exploring, developing and producing oil or gas deposits in the state.[11] Lease expenditure must then be adjusted by subtracting payments or credits received by the producer for other leasehold or management payments; insurance and other production-related reimbursements; and amounts received from the sale or transfer of assets acquired as a result of the leasehold and oil or gas. There are also gross revenue exclusions of 20 per cent for certain new production, with an additional credit of $5 per barrel produced. For all other production, there is a sliding scale, non-transferable tax credit of up to $8 per barrel based on oil prices.

For all extractive sectors Alaska's CIT applies, with a payment of $10,830 on the first $222,000 of taxable income, and the remaining taxable income subject to a tax rate of 9.4 per cent. Under this regime, the CIT base is aggregated based on the unitary business principle (see Chapter 10 for discussion of this principle). The unitary business determination is a factual, case-by-case analysis: where entities are under common control, either directly or indirectly, and the activities of the entities are contributory and complimentary, there is a unitary business. For all such taxpayers engaged in a unitary business that derive income from sources within and outside of the state, a combined report of income from all sources is required. The tax base is then apportioned based on the proportion of economic factors located within the state, vis-à-vis out-of-state economic factors. Consolidated returns are allowed in any case, and required when filing a federal consolidated return, but separate combined reports are required for each unitary business group represented in the federal consolidated return.

The unitary business principle also applies in the taxation of the oil, gas and pipeline sector: each subsector is combined into one unitary business, and apportioned according to the formulas below. The oil, gas and pipelines sector is subject to worldwide combined reporting, and all other sectors file returns based on water's edge combined reporting.

The oil, gas and pipeline sector tax base is apportioned by a formula based on sales (including tariffs), property and an extraction factor, consisting of total production of barrels of oil plus 1/6 Mcf of natural gas. If the taxpayer is engaged in all three subsectors (oil, gas and pipelines), the formula factors are sales, property (including intangible drilling and development costs), and the extraction factor. If the taxpayer is not involved in the production of oil and gas or of gas only, the formula factors are property and sales. If the taxpayer is not involved in the pipeline transport of oil or gas, the formula factors are property and extraction. Thus, for a taxpayer engaged in all three subsectors – oil, gas and pipelines – Alaska taxable income equals the total worldwide income multiplied by the ratio of Alaska economic activity in proportion to economic activity elsewhere.

Alaska taxable income

$$= \left(\frac{1}{3} \left(\frac{\text{Alaska sales}}{\text{worldwide sales}} \right) + \frac{1}{3} \left(\frac{\text{Alaska property}}{\text{worldwide property}} \right) + \frac{1}{3} \left(\frac{\text{Alaska prod'n}}{\text{worldwide prod'n}} \right) \right) * \text{Worldwide net income}$$

Although Alaska adopted the Uniform Division of Income for Tax Purposes Act (UDITPA) in 1959, and has used the three-factor property, payroll and sales formula since that time, it was not until 1978 that the legislature found that the standard formula did not fairly reflect Alaska income for oil and gas corporations. In response, the legislature adopted a law requiring oil and gas companies to calculate Alaska taxable income using separate accounting. This change was met with such a high level of litigation from taxpayers that three years later the legislature modified the apportionment formula for the oil, gas and pipelines sector to include an extraction factor. In 1991 the legislature allowed companies to use water's edge apportionment; however, the oil, gas and pipelines sector was allowed to continue to report on a worldwide basis (Alaska Tax Division 2012: 26-7).

Recently, the Alaska Supreme Court issued a decision in *Tesoro Corp. v. Alaska* solidifying the application of worldwide combination of a unitary business and formula apportionment with respect to oil and gas companies. Tesoro Corporation is a petroleum company, headquartered in Texas and comprising 33 subsidiaries organised into five business segments – one is based in Alaska, the remaining segments in Bolivia, Louisiana and Texas. When the exploration and production business segment (located in Bolivia and Texas) realised profits of approximately $200 million from the sale of an interest in a gas field, and sums from a successful breach of contract claim (that were far greater than those of the Alaska retail and marketing segment), Tesoro sought to isolate this profitable segment from the Alaska unitary business in order to avoid bringing this income into the combined tax base. Upon examination of the unitary nature of the business, the Court ruled that the exploration and production segment belonged to the Alaska unitary business, and, as a result, all the income from the business segment was correctly included in the unitary tax base and apportioned to arrive at the Alaska taxable income.

Comparative revenue is detailed in Table 9.1, and a comparison of the PPT and CIT is below in Table 9.2. Although both taxes incorporate costs at some level, the bases and scope of consolidation are very different. The base of the PPT is the net value of in-state production only, while the base of CIT is the global profit/loss of the entire unitary business. Thus, the PPT operates from the bottom-up, and requires attribution of costs to in-state operations, while CIT operates from the top-down, by removing all intra-group transactions to determine the overall profitability of the consolidated corporate group. Applying both perspectives, the tax administration has more information to ensure consistency in costs reporting. In addition, the understanding of in-state costs in relation to overall profits can inform the design of more efficient production taxes.

Table 9.1 **Tax revenue from EI sector in Alaska**

Revenue source	**Revenue collection ($ million – FY 2012)**
Petroleum Production Tax	6,146.1
State oil and gas rents, royalties, bonuses and interest	2,031.7
Oil and gas CIT (state-level only)	568.8
Oil and gas Property Tax	111.2

Source: Alaska Department of Revenue, Revenue Sources, Spring 2013

Table 9.2 **Alaska oil and gas CIT and PPT comparison**

Tax type	Base	Rate	Consolidation scope	Deductions	Excluded deductions
PPT	net value of production = gross value at point of production less deductions (for lease expenditure less adjustments)	35%	in-state production only	**gross value deductions** = lower of the actual or reasonable costs of transportation **lease expenditure** = ordinary and necessary upstream costs as well as direct costs and overhead expenses for exploring, development and production in the state **lease adjustments** = subtract payments or credits received by the producer for other leasehold or management payments; insurance and other production-related reimbursements; and amounts received from the sale or transfer of assets acquired as a result of the leasehold and oil or gas	depreciation, depletion or amortisation; royalty or production payments; interest or financing charges for raising equity or debt capital; fines, penalties, arbitration or indemnity costs; acquisition or organisation costs; abandonment or clean-up costs; political lobbying costs; taxes measured by net income
CIT	net income	$10,830 on first $222,000; remaining subject to 9.4%	worldwide net income of consolidated business apportioned by in-state sales and tariffs, property + intangible drilling and exploration costs and extraction	same as federal taxable income expenses and deductions except those in the next column	taxes based on or measured by net income; intangible drilling and development costs should be capitalised and depreciated (not expensed); depletion deducted on a cost basis only (not percentage); accelerated or bonus depreciation not allowed

Assessing the unitary approach for the EI sector

This chapter has described EI tax structure variations at the US and Canadian subnational levels, to explore whether a unitary approach could enhance tax and royalty policies from the sector. On the one hand, it has been observed that although the scope of aggregation varies widely, the US and Canadian subnational CIT regimes employ a unitary approach by aggregating the tax base across jurisdictional borders. However, for other EI levies the base is restricted to the source jurisdiction – and sometimes even to the project or well. In this section, we assess the suitability a global unitary approach under three aspects: revenue composition, aggregation of the tax base, and apportionment of the tax base. We conclude with recommendations in the final section.

Composition of mineral revenue

Evaluating the case studies of US states[12] and Canadian provinces in this study, the first point is that in the overall mix of revenue collection from the extractives industries, higher revenue is derived through EI levies than CIT. Given the right combination and design, EI levies have the potential to capture greater economic rents from oil, gas and mining than taxes restricted to corporate profits. In some cases, such as the Minnesota taconite industry, CIT has been replaced completely by a revenue-based (with limited deductions for refinement) EI levy of 2.45 per cent. In Alaska, despite the presence of worldwide combined reporting rules that aggregate the CIT tax base for the oil, gas and pipelines sector, revenue from CIT constitutes less than 10 per cent of revenue from the Petroleum Production Tax. While information on revenue composition from EIs in developing countries is scarce, available evidence from African countries indicates that CIT collection often exceeds other EI levies.[13] There may, of course, be good reasons for this difference – for example, there may be more scope for levies such as royalties in more mature industries such as those in the US and Canada, if initial development expenses have been recovered. Nevertheless, given the greater potential in capturing rents, it could be more advantageous for African countries to place more reliance on EI levies than CIT.[14]

Tax base aggregation

Despite the comparatively smaller contribution to revenue from CIT in the US and Canadian subnational tax systems, tax base aggregation and combined reporting present the advantage of providing a clearer picture of global investment, production, revenue and corporate structures, which aids in understanding the true income and costs borne by private producers. These costs are a factor in all types of extractives revenue collection instruments – even those that are volume-based, as the royalty rate per unit of production will reflect a sharing of profits that accounts for production costs. When governments have a clearer understanding of costs and risks involved in exploiting their natural resources, they are able to design more effective EI levies that reflect these costs and risks without deterring investment. Likewise, under rules that aggregate the tax base, separate business structures no longer offer a tax benefit, either because of the redefinition of the tax base or because companies now must combine their business operations into a single combined tax return. Hence, private producers can also allocate resources in more efficient ways.

It is important to consider carefully the level at which accounts are aggregated to define the tax base. A worldwide system of combined reporting may involve an increase in the information and reporting requirements for firms, but the revenue gains to governments from disabling income shifting and inflated costs reporting would likely compensate for the additional administrative resources required. Another potential problem for worldwide combined reporting, especially for small economies largely dependent on local extractive revenue, is the global offsetting of profits and losses, which is exacerbated by large upfront costs involved in the extractives industry. As the *Tesoro* case from Alaska illustrates, tax claims on profits earned by related companies in foreign jurisdictions can result in conflict. Conversely, sharing global losses may be politically unpopular in host countries, especially where there are acute demands for extractives revenue to finance development priorities.

At the other end of the aggregation spectrum, a rent/profit-related EI levy could be completely ring-fenced, and all sales of extracted minerals taxed at the source. This system would satisfy source entitlement concerns, and perhaps involve a simpler reporting scheme. However, ring fencing may introduce more complexity since costs (which are usually incurred at higher levels of a vertically-integrated firm) must be segregated, and an appropriate proportion attributed to a specific project. This complexity would incur increased compliance costs for private producers, as well as increased administration for the government. Moreover, without the expertise and information to be able to understand the overall costs and revenue generated by the firm as a whole, the government may not be able to accurately establish appropriate prices and costs.

Additionally, since other losses cannot be used to offset ring-fenced projects, the balance of *ex ante* risk between the firm and the state is altered, which may have important effects on investment decisions. Given the volatility of world prices, variability of mineral quality, and high potential of profit, a profits/rent-based tax restricted to in-state production, complemented by a global combined reporting unitary approach for a CIT, could provide an optimal mix for EI levies.

Tax base apportionment

When a government adopts a global unitary approach to taxation of the EI sector, another important consideration is the apportionment of the tax base. The unitary approach used in Canada allocates corporate income through a formula of two factors: sales by destination and payroll. Although there are special formula rules for certain industries, the EI sector falls under the general allocation formula. This results in lower revenue for resource-rich provinces: sales by destination attributes the revenue to other consuming provinces, and, due to its capital-intensive nature, the EI sector requires comparatively fewer jobs than most other industries. The single sales by destination formula, now adopted by 16 US states, attributes all revenue of minerals sold to out-of-state consumers outside of the state. The Massachusetts three-factor formula, once dominant in the US states but now only used by 12 states, incorporates a factor for tangible assets, which would include tangible assets used in the EI sector, but would continue to attribute sales of the minerals away from the state of production when the mineral is sold to out-of-state consumers. This is often the case in integrated economies, where minerals may be extracted from the source state and shipped out-of-state for processing, refinement and manufacturing. It is also the case in some developing countries, where minerals extracted from the source state are generally shipped abroad for processing.

In response, some US states have used more aggressive means to capture their mineral revenue for taxation. For the past three decades, Alaska has used a special formula for the oil, gas and pipelines sector that includes sales and tariffs, property, and an extraction factor, consisting of total production of barrels of oil plus 1/6 Mcf of natural gas. Another way for source states to capture mineral revenue under a formulary apportionment scheme would be to adopt an origin-based sales factor, as used in the apportionment formulas in the Swiss cantons (see Chapter 10). Due to the prominent source entitlement concerns in the EI sector, alterations to a general apportionment formula may be necessary, especially the sales factor. This can be justified by the fact that countries of consumption can also apply often high taxes on the sector, especially on petroleum products.

Conclusion

Given the advantages and limitations of a unitary approach as applied to the EI sector, use of a CIT under global tax base aggregation, in combination with other rent/profit-related levies assessed on a more restricted base, such as the source jurisdiction, could enable more effective administration of all taxes on the EI sector in the following ways:

- The information from the worldwide combined report, which is top-down, can serve as backstop to costs reporting under other EI levies that require separate accounting, which is bottom-up
- Worldwide combined reporting under a global unitary approach aligns with current reform initiatives, such as the EITI and CbCR

- A unitary approach to CIT enables more effective design of other rent/profit-related EI levies that require a clearer picture of costs and risks borne by the industry
- A unitary approach to CIT can be more favourable for investment because it allows global offsetting of corporate losses
- Finally, in apportioning the aggregated tax base, source-based factors, such as special extraction factors or origin-based sales factors for the EI, can be used to satisfy source entitlement concerns.

Notes

1. e.g. the widespread practice described as 'galamsey' in Ghana.
2. Lundstøl, Raballand and Nyirongo (2013); Curtis, Ngowi and Waris (2012). There have also been inquiries and reports by governments, e.g. in Tanzania the Bomani Report (2008), and an active public debate, notably involving the then opposition shadow finance minister, Zitto Kabwe, see http://zittokabwe.wordpress.com/?s=mining. For the legal framework of mining taxation in Tanzania, see Muganyizi (2012).
3. The EITI Principles were agreed at a conference in London in 2003, and the EITI Standard, extending to implementation, governance and management, was adopted in 2013: see http://eiti.org/.
4. Wall St Reform and Consumer Protection Act 2010, s.1504; although the rulemaking process has been lengthy and subject to legal challenges.
5. Directive 2013/34/EU, to be implemented by member states within two years.
6. See OECD (2015a Action 13).
7. Government revenue may also be derived by other means, e.g. production-sharing agreements, especially in petroleum; these are not considered here. However, similar issues may arise in that context – notably, transfer pricing.
8. See OECD (2015a Action 8-10: 51-54) on *Commodity Transactions*, and for a critique see BEPS Monitoring Group (2015).
9. Allocation reduces taxes if the weights allocate more income to low-tax rate jurisdictions. e.g. Quebec had a much lower CIT rate than other provinces in the 1980s – companies with sales and payroll primarily in Quebec would prefer allocation rather than setting up separate affiliates in each province.
10. The federal government owns over two-thirds of the area in the state; state-owned lands comprise almost one-third; and privately-owned land other than native lands comprises less than 1%.
11. Lease expenditure does not include depreciation, depletion or amortisation; royalty or production payments; taxes measured by net income; interest or financing charges for raising equity or debt capital; fines, penalties, arbitration or indemnity costs; acquisition or organisation costs; abandonment or clean-up costs; or political lobbying costs. Any other expense incurred through internal transfer must be demonstrated by the producer as not exceeding fair market value.
12. In this chapter we have discussed in detail only the state of Alaska; however, we draw conclusions from the wider analyses in the longer paper (Siu, Picciotto, Mintz and Sawyerr 2015).
13. e.g. in the oil sector in Chad (2010), CIT revenue comprised 69% of the revenue share while royalties comprised only 28% (IMF 2012: 23, fig. 3). Further, EITI reports from the mining sector in Ghana indicate that CIT receipts comprised 65% of total levies in 2011.
14. For evidence that a price-based royalty may effectively track profitability while avoiding many of the problems of a CIT, see Clausing and Durst (2015).

Chapter 10

Lessons from Existing Subnational Unitary and Formulary Apportionment Approaches for a Regional Transition to Unitary Taxation

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Introduction

In the last century, the federal states of the United States, Canada and Switzerland created subnational corporate tax systems to enable economic integration and growth through greater tax coordination. In this century, regional economic integration has become the trend in today's global economy. The European Union (EU) has been a front-runner in regional economic integration, and has developed a proposal for a Common Consolidated Corporate Tax Base (CCCTB) that would harmonise, consolidate and apportion the EU tax base on a regional level. Other regional economic communities in Asia, Latin America and Africa, which have also embarked on a path of economic integration, including tax harmonisation, are watching the EU experiment closely. However, there are lessons to be learned from existing subnational tax base aggregation and apportionment systems that would be helpful in a regional transition to unitary tax systems. This work analyses these systems, and then outlines possibilities and trends towards the implementation of unitary taxation approaches in four regional economic communities.

Existing models of subnational formulary apportionment

Formulary apportionment systems share the corporate income tax base among the tax jurisdictions in which the corporation conducts business activity. This section describes subnational systems of formulary apportionment in the US, Canada and Switzerland.

Subnational formulary apportionment in the US

After the 16th Amendment authorised Congress to assess federal income taxes in 1913, many states followed this trend by adopting corporate income taxes at the state level. However, US states had been taxing commerce since the early 1800s. In an open federal market, such commerce increasingly took on an interstate character: express courier, railroads and telegraph companies flourished by the mid-1800s, and quickly became subjects of state taxation. In this context, the 'unit rule' became accepted for tax assessment of property and company gross receipts. Notably, in *State Railroad Tax Cases* (1875) the US Supreme Court upheld an assessment on company property apportioned by track mileage located within the state.[1] Under this principle, the property or gross receipts of a company are first valued as a whole, and then apportioned among tax jurisdictions according to a factor reflecting its presence in the state, such as track or telegraph miles (Isaacs 1926). When the states also began to adopt corporate income tax, the unit rule was applied to the net income from multistate business activities. Thus this early concept, which evolved into the unitary business principle, constitutes the US subnational approach to unitary taxation.

A state's taxing power is circumscribed by the US Constitution. State taxes can apply to out-of-state corporations, but an economic nexus must be shown between the profits from the business activity and the taxing state. The Due Process Clause requires 'some definite link, some minimum connection, between a state and the person, property or transaction it seeks to tax',[2] while under the Commerce Clause there must be a 'substantial nexus'.[3] A few states have enacted statutes to define economic nexus, based either on qualitative factors or quantitative levels of revenue, such as a minimum of $1 million in sales receipts in the case of New York. In other cases the issue is left to the courts to decide, and some state courts have accepted that the nexus requirement does not necessarily require physical presence. They have developed a concept of significant economic presence, which involves an examination of the 'quality and quantity of economic contacts' as well as 'the frequency, quantity and systematic nature of a taxpayer's economic contacts with a state'. For example, in *MBNA America Bank*, MBNA had no physical presence in the state, but because it 'systematically and continuously engaged in direct mail and telephone and solicitation and promotion in the state' and had 'significant gross receipts attributable to customers in the state' (from financial services), the state court upheld the state's exercise of tax jurisdiction over the income earned from the activity in the state.[4]

In 1957, the Uniform Law Commission developed the Uniform Division of Income for Tax Purposes Act (UDITPA), to provide a common template for state apportionment of the tax base, and by 1967 the states developed a Multistate Tax Compact (MTC), which incorporated UDITPA in its Article IV. To date, there is no federal law requiring uniformity or harmonisation of state taxation. Although all the US states with a corporate income tax follow the basic principles of the MTC to aggregate and apportion the income tax base for corporations with multistate business activities, there are significant variations, especially on the apportionment formula. State corporate income tax bases generally begin with federal taxable income as a starting point, and the tax base is comprised of gross income less allowable deductions (Duncan 2005). Tax incentives offered by states for economic development or social purposes create the greatest source of divergence of tax base definitions among the states. Schedules for depreciation of capital assets may also differ from federal allowances.

The constitutional requirements for fair apportionment developed by the US Supreme Court have also led to the unitary business principle, on the grounds that when 'factors of profitability arise from the operation of the business as a whole, it becomes misleading to characterise the income of the business as having a single identifiable "source"'.[5] Court decisions have specified characteristics of a unitary business, including functional integration, centralisation of management and economies of scale. The MTC provides: 'A unitary business is a single economic enterprise that is made up either of separate parts of a single business entity or of a commonly controlled group of business entities that are sufficiently interdependent, integrated and interrelated through their activities so as to provide a synergy and mutual benefit that produces a sharing or exchange of value among them and a significant flow of value to the separate parts' (MTC Regulation IV.1(b)).

However, the dual requirements of common control and a unitary business have resulted in considerable litigation, especially over which activities of a corporate group are sufficiently integrated to be considered part of a unitary business.

The tax base for a multinational corporation may be consolidated to include only its business activities within the US under a water's edge approach. Under this approach, only US domestic net income is pooled together for apportionment among the subnational taxing jurisdictions that have some economic connection to the income. Alternatively, the tax base for a multinational may be consolidated through a *worldwide* approach, often referred to in the US as worldwide combined reporting. This means that all its profits (and losses), both US and foreign, are pooled together for apportionment. A number of US states that required worldwide combined reporting, particularly California, were put under strong pressure in the 1980s, which eventually led to them offering multinationals the option of filing only on a water's edge basis (McIntyre and Pomp 1995; Pomp 2009 vol. 2 at 10-49-50). This led a group of states (approximately ten) to adopt water's edge election rules, which nevertheless require the reporting of income from related companies in some foreign jurisdictions, defined as low-tax jurisdictions (Siu *et al*. 2014).

Once all taxable income is aggregated, most states characterise income as either business or non-business and only apportion the business income, while allocating the non-business income to a specific jurisdiction. State apportionment formulas have evolved over the past century: a three-factor formula, using sales, payroll and property, equally-weighted, called the 'Massachusetts Formula', was predominant by the 1950s but is now used by only 9 states; the same formula, with double or greater weighted sales (or the choice thereof), is used by 15 states; and a single destination-based sales formula is used by 25 states (FTA 2016).

As early as 1920, the US Supreme Court upheld an apportionment formula based on a single asset factor.[6] In the 1990s adoption of the single sales formula increased, as states sought to attract economic investment (see Chapter 6). All states using a sales factor apply a destination basis for sales. Importantly, to ensure that income is not untaxed, states have adopted throwback or throw-out rules. These provide that when the destination basis attributes the income to a state where it is not taxable (e.g. if there is insufficient nexus), sales income is attributed to the last state of production, or sales are thrown out from the formula entirely. All but a few states have such rules, and approximately half the states using a single-sales factor have them.

In regard to reporting, most states require or permit a combined report, which includes reporting of taxable income in all jurisdictions from all business activities, either on a water's edge or worldwide basis. Under federal law taxpayers have the option of filing a consolidated return, provided every member of the affiliated group consents. A consolidated return differs from a combined return in that consolidated taxable income is computed by calculating the *separate* taxable incomes of the members, aggregating them, and increasing or decreasing the result by items that are computed on a consolidated basis, such as ordinary and capital gains and losses. Thus, with consolidated returns, the intragroup transactions (and associated transfer prices) remain. However, with combined reporting, all intragroup transactions are eliminated in arriving at a total combined profit/loss for the group.

The absence of comprehensive federal legislation requiring tax harmonisation reflects a broader struggle between states and the federal government to protect their taxing powers and revenue, and to maintain a balance between promotion of economic development and funding public services. However, within this context some states have devised effective solutions to extend their corporate tax base by expanding the scope of tax jurisdiction, including the use of significant economic nexus concepts, as well as by extending the scope of tax base consolidation and reporting. Indeed, despite the political uproar in the 1980s, worldwide combined reporting is now applied (either allowed, required or required under limited circumstances) in 17 of the US states.

Subnational corporate income allocation in Canada

Canada is a federal state, and since the British North America Act of 1867 provinces have had the power to levy direct taxes within their borders, while the federal government has had access to all objects of taxation. In 1917 the federal government began to assess an income tax.

In 1941, the provinces agreed to give up their income and estate taxes in return for rental payments. These tax rental agreements continued until 1962, when the federal and provincial governments (except Ontario and Quebec) entered into tax collection agreements, which restored the provincial income tax. Today, all provinces have tax collection agreements with the government of Canada, apart from Alberta and Quebec. Under the Federal Constitution, the federal and provincial governments have concurrent powers in the field of direct taxation. The Federal Income Tax Act and Part IV of the Regulations under the Income Tax Act provide rules for administering direct taxes on income, and allocating the corporate income tax base among provinces. At the subnational level, the provinces have legislation and regulations, which align with federal law and provide for varying tax credits against the base.

Under the tax collection agreements, provinces are required to use the same taxable income base as the federal government, the same rules for determining residency, and the same methods of allocating the tax base among the provinces. For companies not resident in the province, tax jurisdiction is based on permanent establishment (PE) rules, as used in international tax, which generally require a physical presence. All provinces, including non-signatories to the tax collection agreements, have adopted a harmonised tax base, as well as a common formula for allocating the tax base. Nevertheless, the federal and provincial calculation of total tax liability can differ due to varying tax credits against the base. Each province and territory has its own tax incentive structure. Higher tax rates among the provinces range from 10 per cent to 16 per cent, with lower rates ranging from 0 per cent to 8 per cent. Provincial tax incentives are typically given to encourage political contributions, research and development, energy efficiency, job training and multimedia industry sectors.

Canada does not allow consolidation of income from separate legal entities. However, income from interprovincial PEs of a single corporation is consolidated. With the exception of specific rules for special industries, a two-factor formula is used for allocation: gross revenue (i.e. sales), and salaries and wages. Where there is only one factor present in the province, the formula should only contain that factor. Gross revenue from the sale of goods is generally allocated on a destination basis. Gross revenue from services is attributed to the province in which they are rendered. Wages and salaries also include fees for services that would normally be performed by employees of the corporation, and they are attributed to the particular PE where the services are rendered. Along with the general two-factor formula, which is used uniformly throughout the provinces, there are nine different formulas applied to ten specific industries. These include insurance (net premiums only), banks (loans and deposits instead of gross revenue), trust and loan companies (gross revenue only), railway companies (equated track kilometres and gross ton kilometres), airlines (capital cost of fixed assets and revenue plane kilometres), grain elevators (bushels of grain instead of gross revenue), bus and truck operators (kilometres driven instead of gross revenue), ships (port-call-tonnage instead of gross revenue), and pipelines (kilometres of pipe instead of gross revenue). By agreement with the provincial tax authority, corporations with multiple business lines may also divide taxable income according to the applicable formulas for each type of business.

On the annual return, taxpayers with PEs in more than one province or territory must report on the same income tax return amounts for each province or territory in which they had a PE in the tax year. Where a corporation has a PE in a province in a year, 10 per cent of its taxable income earned in the year in that province may be deducted from its federal taxable income.

The Canadian provincial corporate income tax system is distinctive in its uniformity relative to other jurisdictions following a unitary/formulary apportionment approach. Although provinces can apply different tax rates and credits to the tax base, the tax base itself is harmonised: it is determined from the federal definition of income, and the same set of general and special allocation formulas are used by all provinces. The weakness of the system, however, is that income from corporate affiliates is not included in the consolidation, and therefore it is not unitary in the strict sense. Because firms are not consolidated beyond the legal corporate entity, each corporation, which may be part of a larger corporate group, operates a separate accounting system for determining corporate taxable income. Consequently, a study has found that this separation provides an incentive for multijurisdictional firms to shift income, primarily through borrowing and lending among affiliates incorporated in different provinces (Mintz and Smart 2004). In federal government consultations on the introduction of a broader consolidation of profits and losses, corporations have favoured consolidation *only after* separate entity accounting, while provinces fear the potentially significant erosion of the provincial tax base, and have requested further research on revenue impacts (Richardson and Smart 2013; PwC 2011; Ontario 2011).

Subnational formulary apportionment in Switzerland

When the Swiss Confederation was established in 1848, Switzerland became a single judicial and economic union – foreign policy, defence, customs, postage and coinage were centralised, and no longer administered separately by the cantons. Although the levying of customs duties was given to the confederation, income and wealth taxation remained with the cantons. Toward the end of World War I, however, the confederation introduced stamp taxes and a National Defence Tax (Federal Direct Tax) on income and wealth. Today, this tax, along with

Value Added Tax (VAT), is the most significant tax assessed at the federal level. While the confederation and the cantons currently have concurrent powers of direct taxation, this right for the confederation expires in 2020 and must be renewed by popular vote under Article 196(13) of the Federal Constitution. Under Article 128, the confederation is limited to a maximum rate of tax on corporate income of 8.5 per cent. This tax is assessed and collected by the cantons, and a minimum of 17 per cent of the gross revenue is allocated to the cantons. Thus, the cantons derive much more revenue from corporate income tax than the confederation.

Intercantonal double taxation is prohibited by Article 127(3) of the Swiss Constitution. Article 127 also provides that the main features of any tax, in particular those liable to pay the tax, the object of the tax and its assessment, must be regulated by law, and gives authority to the federal government to legislate measures to avoid double taxation among the cantons. The federal Supreme Court of Justice has developed case law regarding implementation of this prohibition against double taxation. The Federal Constitution (Article 129) also allows the confederation to harmonise the direct taxes imposed by the confederation, the cantons and the communes.

Like the Canadian provinces, the income of intercantonal business activities of a corporation is consolidated at the individual corporation level only, and not at the corporate group level. Transactions between affiliates must be reported according to the arm's length principle. The consolidated income includes all income derived from the business, including investment property, income from main and secondary tax domiciles,[7] as well as income of foreign PEs[8] and properties plus dividends or capital gains on foreign participations. Income not deriving from the business of the enterprise, such as passive investments, is subject to allocation. This income is first *allocated* to special tax domiciles, and the remainder is *apportioned* between the primary tax domicile and the secondary tax domiciles. Income from holdings in other companies is apportioned (with the exception of banks).

Jurisdiction to tax the income from intercantonal business activities of a corporation is based on tax domicile. A corporation's business activities or presence may give rise to a primary tax domicile, a secondary tax domicile, or a specific tax domicile. The only exception to this categorisation is for corporations with no link other than registration, so called 'letter-box' tax domicile. In this case, the actual place of management is deemed to establish the primary tax domicile, while the canton exercising this taxing jurisdiction bears the burden of proof. Income of intercantonal enterprises is *apportioned* among the primary tax domicile and the secondary tax domiciles, while income from a specific tax domicile is *allocated* to that specific domiciliary jurisdiction.

Although the Federal Tax Harmonisation Law establishes uniform substantive and procedural taxation rules, the cantons retain different tax brackets, rates and allowances. The most significant divergence arises through competing tax exemptions. Cantons, in consultation with the communes within their borders, have the discretion to grant tax exemptions or holidays, either partial or full, to newly-established businesses for up to ten years to further economic development objectives, such as inward investment of capital and local employment targets.

In Switzerland, there are three different methods of apportionment: direct, indirect and a hybrid of the two. Direct apportionment applies only if a company has a PE managed as a separate enterprise with its own accounting books, in which case the separate profit or loss is determined through separate accounting, and then aggregated. These aggregate profits/losses are apportioned to the relevant cantons through industry-specific formulas. Under indirect apportionment, the income and expenses of intercantonal business activities of all PEs of a corporation are consolidated, and this tax base is apportioned to cantons according to the respective ratio of factors of production present within its borders. These factors include turnover or gross receipts, payroll and assets. In principle, the indirect method is only acceptable when the direct method is insufficient, but in practice the predominant method is the indirect. Mixed apportionment allows application of different apportionment formulas to divergent business lines.

No general standard formula for apportionment exists in Switzerland. Instead, different formulas have been developed over time through practice, and confirmed on occasion by the Swiss Supreme Court for different industry sectors. For example, for the retail commercial sector income is apportioned by a single factor, turnover or gross receipts, and is attributed to the PE making the sales regardless of the destination. Each formula may also apply a corrective mechanism (*Präzipuum*), which attributes a certain percentage of the profits to the primary place of central management if it is perceived that too little profits are apportioned to the central management of the enterprise.

The cantonal tax administration of the corporation's main tax domicile conducts a review/audit of all tax assessments. Accounting methods are laid down by Swiss civil law, and there are rarely any differences between tax and accounting reporting standards. For taxpayers, there is an administrative appeal procedure, followed by two levels of cantonal court review, with the final authority given to the Swiss Supreme Court. Intercantonal disputes first involve bilateral negotiation (and conflicts are usually resolved this way), but may be brought before the Swiss Supreme Court.

In order for any shared taxation approach to be successful among cooperating jurisdictions, there must be a unifying principle as well as procedures in place that help the system run smoothly. For Switzerland, this principle can be found in the constitutional prohibition against double taxation. This requirement is interpreted very stringently by the Swiss Supreme Court, even prohibiting virtual double taxation – taxing income that is allocated to another canton, but which is not taxed there. Procedurally, although the tax bases of the cantons are not completely harmonised, there is a uniform tax accounting period, with the same taxable subjects and objects, filing requirements, including standard tax forms, and uniform enforcement and appeal procedures. Importantly, there is a close proximity of accounting records to taxable income: taxable income is determined from the corporate profit and loss statements as determined by the Swiss Code of Obligations. Also, because each canton requires a reporting of worldwide income and capital, the information for accurate assessment is available to tax authorities.

Regional applications of unitary taxation: proposals and prospects

European Union – the proposed Common Corporate Consolidated Tax Base (CCCTB)

The EU is a political and economic community, now comprising 27 member states. Since the Treaty of Rome was signed in 1958 (now the *Treaty on the Functioning of the European Union* (TFEU)), direct taxation has always remained a matter for national states. In the first 30 years, therefore, tax harmonisation unsurprisingly was confined to sales taxes, instituting a common VAT. From 1997 a new approach was adopted, focusing on company taxation and emphasising in particular: (i) tax diversity as an obstacle to the Single Market, and (ii) unfair tax competition, with the Commission working more closely in conjunction with the Council. To deal with harmful tax competition, an intergovernmental group was set up in 1997, operating within the framework of the Council, chaired by the Commission, working on a confidential basis, the main task of which has been the application of a Code of Conduct for Business Taxation. It issued a substantial report in 1999, listing the measures identified as potentially harmful under the Code, and its decisions on them. Measures found harmful were expected to be modified or withdrawn, and no similar ones should be introduced.

Although the Code is non-binding, the Commission launched in parallel a review of tax measures that could be considered state aid, prohibited under the TFEU (Art. 107). In general terms, state aid is prohibited if it is selective – either to a specific group or type of firms or to a sector, and to a geographical area unless it has fiscal autonomy, except for aid to underdeveloped regions approved by the Commission (Wishlade 2012).[9]

This has put pressure on some measures by member states – for example, leading to the phasing out by Ireland of its ten-year tax holidays for inward investors, in favour of a general corporate tax rate (initially 10 per cent, revised to 12.5 per cent). At the same time, the European Court of Justice (ECJ) became more active in applying other treaty provisions, notably the right of establishment, to strike down some national tax measures, such as controlled foreign corporation (CFC) provisions, even if they are regarded as compatible with international tax rules. The combined pressures of the Code, application of state aid rules, and greater ECJ activism, opened up some space for exploration of closer EU coordination of corporate taxation, despite the resistance of many member states.

In 2001 the Commission began a study for one set of rules on the corporate tax base (European Commission 2001: 15), and in 2004 set up a Working Group to developed the technical details. In the context of the Euro crisis and calls for closer fiscal coordination, in March 2011 the Commission adopted a proposal for a CCCTB, which harmonises, consolidates and apportions the taxable income of corporate groups operating within the EU (European Commission 2011). The CCCTB was approved, with some proposed amendments, by a large majority in the European Parliament. Under technical examination by the Council, subsequent presidencies produced compromise proposals with significant revisions focusing on the common tax base. The adoption of the CCCTB Directive requires unanimous approval of the member states, but it is possible for a smaller group of member states to proceed on their own through an exceptional procedure for enhanced cooperation. Upon adoption, the Directive must be implemented into the national tax systems of each member state; however, adoption by the member states in the short term appears unlikely. Nevertheless, public concern about corporate tax avoidance has greatly changed the political climate in Europe, fed also by revelations such as the Luxembourg Leaks and the Panama Papers. In June 2015 the Commission issued an Action Plan on a Fairer Corporate Tax System in the EU. This reiterated the merits of the CCCTB as a holistic solution, and announced that it would be relaunched, this time as compulsory for companies, but in a two-stage process – first a common tax base, to be followed by a shift towards consolidation and apportionment.

The 2011 proposal was optional for eligible companies. Generally, eligible companies must be either: (i) incorporated in a member state and subject to company taxation in one or more member states; or (ii) subject to company taxation in one or more member states through a PE there. It provided for a high degree of tax base harmonisation, including definitions of profit, loss, revenue, expenses and other deductible items, along with a framework for depreciation. The tax base under the

CCCTB is defined as revenue less exempt revenue, deductible expenses and other deductible items (see Chapter 5). Losses may be carried forward indefinitely and deducted against taxable income in subsequent tax years on a first in, first out basis.

Firms opting for the CCCTB must adjust the accounts of all eligible members of the group according to the rules of the CCCTB, and then aggregate them to produce consolidated accounts (Art. 57).[10] The CCCTB would apply to the corporate group, consisting of qualifying companies, including subsidiaries of a foreign parent company resident in an EU member state, and their PEs in an EU member state. A qualifying subsidiary includes first-tier and lower-tier subsidiaries in which the parent has a right to exercise more that 50 per cent of the voting rights; *and* an ownership right to more than 75 per cent of the company's capital or more than 75 per cent of the rights giving entitlement to profit (Art. 54). All intra-group transactions are ignored for tax purposes, and no withholding or other taxation at the source is to be assessed on intra-group transactions (Art. 59, 60).

After aggregation, the tax base is apportioned between group members (and hence to the member state) on the basis of a formula of three factors: capital, labour and sales (Art. 86).[11] The labour factor counts total compensation costs and number of employees at equal weights.[12] The asset factor includes the average value of all fixed tangible assets owned, rented or leased. Intangibles, financial assets and current assets, such as inventory, are not included in the asset factor. Sales are attributed to the destination point, which is defined as 'where dispatch or transport of the goods to the person acquiring them ends' (Art. 96). There is a throwback rule to the last identifiable location of the goods or carrying out of service for destination points with no group member registered there (either a member state or a third jurisdiction). Services are deemed to take place where they are physically carried out; there is no rule for electronically-performed services.

There are special rules for selected industries – financial institutions, insurance, oil and gas, and ships or aircraft in international traffic or inland waterways transport – providing for adjustments to be applied to the factors of the general formula (Arts. 98-101). The proposal has a safeguard clause that allows for alternative apportionment methods in cases where the outcome of the apportionment does not fairly reflect business activity (Art. 87).

Tax rates are not regulated by the Directive: each member state would apply its own tax rate to the share of the tax base as apportioned under the CCCTB (Art. 103).

As for administration, each member state would designate a competent authority to administer the Directive, and the principal tax authority would be the competent authority of the state of residence of the group's parent company within the EU. This entity would file a single consolidated return on behalf of the group to the principal tax authority, which would be accessible by all competent authorities in a central database. The principal tax authority would be primarily responsible for verifying the accounts, but all competent authorities would cooperate or exchange information, and there is provision for joint audits. In the case of a disagreement between competent authorities, a decision could be challenged before the court of the member state of the principal tax authority.

The proposed CCCTB Directive represents the most comprehensive existing framework for harmonisation, aggregation and apportionment of multinational company profits. Indeed, it is unique in providing a detailed technical proposal for a system of unitary taxation that would operate between sovereign states, although within the regional, institutional framework of the EU. It also provides special rules for associated enterprises, and, for transparent entities, a set of anti-abuse rules and a switch-over clause for otherwise exempt income from low- or no-tax jurisdictions. The CCCTB would only apply within participating states in the EU, and thus follows a strictly water's edge approach. Hence, subject to its own CFC provisions, the overlay of double tax agreements would regulate relations with associated enterprises in third jurisdictions.

The analysis in the remaining sections will survey the prospects of moving towards adoption of a common tax base in the East African Community (EAC), Mercosur and the Andean Community (CAN).

East African Community (EAC)

The East African Community (EAC) is a regional economic intergovernmental organisation comprised of six East African nations. The Treaty for Establishment of the East African Community (EAC Treaty) was ratified in 2000 by Kenya, Tanzania and Uganda; Rwanda and Burundi joined in 2007, and South Sudan in 2016. The EAC was established with a vision to set up a prosperous, competitive, secure, stable and politically united East Africa, and widen and deepen economic, political, social and cultural integration in East Africa. To this end, a Customs Union was established in 2005, and a Common Market in 2010. The Fourth Strategic Framework set forth plans for consolidation of the Customs Union and Common Market, establishment of the EAC Monetary Union, and foundational work for the EAC Political Federation in accordance with Article 5(2) of the EAC Treaty.

Under Article 83 of the EAC Treaty, the partner states resolved to 'harmonise their tax policies with a view to removing tax distortions in order to bring about a more efficient allocation of resources within the community'. This tax harmonisation includes aligning investment incentives and avoiding double taxation (Art. 80). This is significantly different from the EU treaty, which, as we have seen above, reserves taxation to the EU member states, and even leaves the removal of double taxation to bilateral tax treaties between the EU member states. In sharp contrast, under the EAC the partner states make a multilateral commitment in Article 32 of the Common Market Protocol, to 'progressively harmonise their tax policies and laws to remove tax distortions in order to facilitate the free movement of goods, services and capital and to promote investment within the Community'.

The EAC has committed to harmonise fiscal policies, and has, in fact, made initial harmonisation efforts, including a uniform corporate income tax rate of 30 per cent across the EAC region. However, up to now income from related party transactions is regulated under international transfer pricing guidelines in the respective country's tax laws. Transfer pricing rules have been enacted in Kenya, Tanzania and Uganda,[13] while Rwanda and Burundi are still in the development stages. The EAC Double Taxation Agreement (DTA) was signed in November 2010: it was intended to come into force on 1 July 2011 but is still subject to ratification by the partner states; thus far, Rwanda has ratified. In anticipation of ratification, regional training on the DTA has been undertaken.

In the context of this ongoing economic integration and tax harmonisation, adoption of unitary taxation in the EAC would ensure that the tax base would be equitably shared among partner states based on economic factors of production and consumption, while also preserving the sovereignty of the states to decide their own levels of taxation and public spending. This is an important factor for the EAC, where domestic taxation is still viewed as a national issue that should not be a subject of regional policy. The unitary taxation approach could further ensure that multinational enterprises (MNEs) would also make a fair contribution as corporate citizens toward the costs of the public services provided by the country in which they do business. While the creation of a large common market acts as a powerful attraction for inward foreign direct investment, a central problem for regional integration is that the benefits of such investment may be unevenly spread. Indeed, this problem was a major reason for the failure of previous integration attempts in East Africa. In addition to establishing a system for regional corporate taxation that could be easier to administer, unitary taxation (UT) could also ensure a balanced apportionment of revenue, taking account of sales as well as production factors.

However, implementation of UT would present practical challenges, especially with determining the apportionment formula. A UT approach may also require a relatively uniform economic situation across countries to arrive at a reasonable result, and may not work well where the costs of labour, property or sales vary significantly. Moreover, the possible economic impacts from a regional application of UT are unclear. Further research in this area is therefore necessary.

Under a UT system, EAC countries might wish to retain different degrees of freedom to try to adapt their tax system to attract investment from multinationals. This could extend to allowing variations on the apportionment formula, which would likely result in a shift towards a sales basis for apportionment as has occurred in the US (discussed above). Alternatively, the EAC could try to define a common tax base and apportionment formula, while allowing partner states to decide their own tax rate, as with the CCCTB. Under either option, states would have to consider the impact on investment, but this would have to be on the basis of favouring value-creating economic factors such as labour, assets and sales. This is very different from the avoidance incentives the current separate entity system gives countries to undermine other countries' tax systems. As the EU experience has shown, it is difficult to restrain such harmful tax practices effectively without corporate tax harmonisation.

Adoption of UT could be facilitated by the regional coordination that is currently in place through the East African Revenue Authority Technical Committee, and ultimately through the East African Revenue Authority Commissioners General Forum. This could raise awareness and create political momentum for the governments to transition to a UT approach. The evolving mechanism to enable exchange of information on tax matters in the region through a Memorandum of Understanding can also be a facilitator.

In the past decade, there has been an acceleration in the growth of private sector regional investments in sectors such as banking, retail distribution, hotels, manufacturing and construction, and at the same time coordinated budgetary expenditure for regional infrastructure development. This convergence will highlight the need in the EAC region for a more cohesive and functional system of corporate taxation. UT may be a viable option, but more research is needed.

Latin America – Mercosur and the Andean Community (CAN)

Mercosur

The economic integration process in Latin America was initiated by the Latin American Free Trade Association (LAFTA), which was established in 1960 by 11 country members – Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela. However, LAFTA was an inflexible integration treaty, and would not allow for bilateral or other type of internal arrangements, and for this reason it did not work properly. The same 11 LAFTA countries then established the Latin American Integration Association (LAIA) in its place. LAIA provides a flexible framework, allowing a wide range of agreements between country members, and between members and nonmembers in the region, and easy access for other countries to join the bloc. There are few restrictions to third-party agreements with country members, except for trade treaties negotiated with developed countries.

Under the LAIA framework, Brazil, Argentina, Paraguay, and Uruguay negotiated the Asunción Treaty of 1991, which established the Mercado Común de la Sur – Mercosur, headquartered in Montevideo, Uruguay. Since its establishment, other treaties have been negotiated between the four countries to establish a more stable framework, including a dispute resolution mechanism.[14] Venezuela joined Mercosur as a full member in 2012; in the same year Paraguay was suspended, while Bolivia joined. Currently Chile, Bolivia, Peru, Colombia and Ecuador enjoy the status of associated countries.

The Asunción Treaty contains a national treatment principle (Art. 7), and a very broad provision for harmonisation of legislation that may strengthen the integration process (Art. 1, par. 6). In its first decade, the country members created a customs union by applying a Common External Tariff to all non-member countries (from 1995). Mercosur treaties include many provisions regarding tariffs and other commercial barriers, and a call for harmonisation of economic policy, but do not include any provision relating to other types of taxes. In addition, several Mercosur institutions have been developed in order to build a formal structure and to solve problems that are typical to common markets, such as rules of origin and the most-favoured nation principle (Valadão 2009: 212). Mercosur experienced a big expansion in the 1990s, averaging 19 per cent growth a year in regional trade, almost three times higher than the rate of growth of their world trade (Pastor 2001). Despite economic and political changes in the region, in 2007 the Mercosur Parliament was inaugurated, and in 2010 a Common Customs Code was approved by the member states.

All five Mercosur countries have adopted a VAT (it is worth noting that the Brazilian VAT system is very complex), and all countries of the bloc assess an income tax on individuals and enterprises. However, because the harmonisation of income and capital taxes is the last step of tax system harmonisation in a process of economic integration, harmonisation of direct taxes is not a current priority in the region. Although there has been academic work dealing with tax harmonisation in the region, there has been no political initiative for such process (Barreix and Villela 2003: 77-99). Indeed, tax harmonisation is not among the current concerns of the Mercosur countries, despite the fact that investment protection measures were adopted by the bloc. However, for some aspects of corporate income tax, such as transfer pricing rules, similar regulations have been recommended (Barreix and Villela 2003: 76).

In the first decade of this century, the Mercosur integration process has been challenged by world transformations and global trends, such as the Free Trade Area of the Americas and US bilateral trade agreements, and, more recently, the global economic crisis. However, it has been noted that: 'there are economic and non-economic factors that are pushing the region to a position where economic and trade integration will be easier in the future. When economic and trade integration will be accomplished, however, is a question yet to be answered' (Valadão 2009: 220).

The application of a unitary approach for Mercosur would be a methodology to replace the arm's length principle in regard to transfer pricing for corporate income taxation. Thus, if a member country has not adopted a corporate income tax, or does not apply transfer pricing rules, in principle there is no common ground for reform. The five Mercosur countries have a corporate income tax, but, as Paraguay adopted it only in 2005, entering into force in 2009, and does not have transfer pricing rules, the Paraguayan approach to transfer pricing would necessarily need to be modified. Uruguay taxes corporate income under the territorial principle.

Moreover, information exchange is also necessary in the move toward unitary taxation. Additionally, accounting standards may be a problem regarding the use of unitary taxation with formulary apportionment (Yussof 2014; Chapter 5 in this collection). Although tax accounting must be consistent among the countries, financial accounting is always a reference, because the two systems use the same accounting basic information. Thus, it is desirable that countries involved share the same accounting methodologies (both for tax and financial purposes). Four countries of the bloc have adopted a common standard, which is the International Financial Reporting Standards (IFRS), though they are in different stages; Paraguay has made a commitment to do so, although it has not adopted IFRS.

On the other hand, one can say that, considering a country-by-country analysis, if Paraguay adopts consistent changes in legislation to adopt transfer pricing adjustments and in accounting standards (towards the international standard), a unitary approach would be feasible for the bloc. However, in terms of common legislation within the bloc, due to the lack of any provision in the constituent treaties, and also considering the current stage of the integration process, a unitary approach for Mercosur is not possible in the short term. Of course, any move towards unitary taxation would require changes in internal legislation of all countries of the bloc to allow for the system to be implemented.

The Andean Community (CAN)

In 1969, Bolivia, Chile, Colombia, Ecuador and Peru signed the Andean Pact, and in 1996 the name of the organisation was changed to the Andean Community of Nations (Comunidad Andina – CAN). In 1973, Venezuela was incorporated into the bloc. In 1976, Chile withdrew from CAN, followed by Venezuela in 2006. The Cartagena Agreement, which is the primary CAN treaty, declares that the aim of the bloc is the gradual formation of a Latin American Common Market. It includes the national treatment principle in Article 75, and calls for the adoption of a common external tariff, but does not address tax harmonisation of direct or indirect taxes. Articles 3, 54 and 57 of the Cartagena Agreement do, however, contain provisions for integration of economic policy of the country members, and harmonisation of national legislation similar to those in the Asuncion Treaty. Commission Decision 388 established rules for harmonisation of indirect taxes as well as of incentives for the exportation of goods. In addition, Decisions 599, 600, and 635 of the Commission of the Andean Community address harmonisation of VAT and excise taxes.

Decision 40/1971 of the Commission of the Cartagena Agreement established a multilateral treaty to avoid double taxation, and also a model tax convention for the CAN member states, which must be used by country members when negotiating double taxation agreements (DTAs) with non-member countries. This Decision was updated by Decision 578 of the Andean Community Commission in 2004, approving a new version of the multilateral DTA, now renamed 'Scheme for the Avoidance of Double Taxation and Prevention of Fiscal Evasion', in force since 1 January 2005 for the current members of the bloc (Venezuela being no longer a member).[15] The countries of the bloc have been negotiating trade treaties separately, which may weaken the cohesion of the bloc. For example, Colombia and Peru signed trade treaties with the EU in 2012. In addition, CAN has also formed a customs union, with free circulation of goods and a common tariff schedule.

This level of agreement puts CAN ahead of Mercosur in terms of income tax integration. Along with Mercosur, the Andean Community also has been negotiating trade agreements with the EU. These inter-regional negotiations could lead to increased integration, and could possibly strengthen the LAIA community. However, the countries of the region, as a reaction to regional integration of northern markets (North America Free Trade Agreement (NAFTA) and the EU), have formed the Union of South American Nations (Unasur).[16] The future of this process remains to be seen, but it will likely involve the whole western hemisphere, and possibly align the NAFTA countries with Mercosur, CAN and Unasur. However, at present Unasur is more focused on political rather than economic integration.

The lack of a provision in the existing treaties, protocols and resolutions envisaging harmonisation of corporate income taxation presents a formidable challenge for the adoption of a regional unitary taxation approach. Furthermore, the fact that Paraguay and Uruguay of Mercosur, and Bolivia from CAN, have adopted systems of territorial taxation, presents an additional obstacle in adopting a unitary approach. For countries applying a territorial base that exempts income and gains from overseas operations and participations, the only international taxation problems they face are transfer pricing manipulation and thin capitalisation, as there is no need for controlled foreign corporation (CFC) rules. Additionally, none of the countries of either bloc allows consolidation for income tax purposes.

Another difficulty may be found in the different accounting methodologies and different stages regarding adoption of the IFRS. Paraguay in Mercosur, and Peru in CAN, have not yet adopted international standards for accounting (Colombia and Bolivia are in a transition phase towards IFRS). On the other hand, Chapter 5 suggests that IFRS standards themselves are unsuitable for tax purposes. Moreover, tax administrations of the countries of the region are at different stages of development, especially regarding information access and publicly-available information. In the short term, it seems that it is not feasible for either bloc to adopt a unitary approach. Such a transition would involve changes in internal tax legislation, and for some countries (especially Paraguay and Bolivia) much more than that. Such a transition would also require a multilateral tax treaty dealing specifically with the issue of unitary taxation to replace internal legislation. Because CAN has adopted a double tax treaty that is in force, one can say that CAN is closer than Mercosur to moving towards unitary taxation within the bloc, despite the political divergences that this move may trigger.

Lessons from existing subnational formulary apportionment models

In the last century, the federations of the US, Canada and Switzerland created tax systems that enabled economic integration through greater tax coordination. In this century, regional economic integration has become the trend in today's global economy. In adapting to a global economy, the EU CCCTB proposal is a front-runner in responding to regional economic integration through tax base harmonisation, consolidation and apportionment on a regional level. This chapter has sought to analyse these tax systems, and explore the advantages and challenges in a unitary approach for regional economic communities in the global South. The discussion below outlines the challenges and lessons learned based on analysis of existing models of unitary taxation and formulary apportionment.

Uniformity

Each unitary taxation approach has developed in a particular political and economic context with varying attributes that enable each system to function properly. There is no one-size-fits-all unitary taxation framework, and each system should be tailored to the circumstances of its respective political and economic union. Given this caveat, uniformity seems to be a key factor for the success of any unitary taxation approach, whether in the definition or apportionment of the tax base. Uniform rules for accounting of income and expenses, as well as tax credits and allowances such as depreciation, eliminate differences in tax base determinations across jurisdictions. Moreover, a high degree of variance increases the likelihood of exploitation of arbitrage opportunities, and also results in higher compliance costs for taxpaying businesses, both big and small. Uniform rules promote vertical equity by levelling the playing field among taxpayers with varying levels of resources for tax planning. Moreover, uniform rules promote efficiency and tax neutrality goals, because location decisions are based on available market resources and potential return on investment, rather than divergent rules for determining, consolidating and sharing the tax base. Finally, a lack of uniformity strains the audit capacity of tax authorities, and impedes effective enforcement of the tax system, which would be particularly acute in developing countries.

Tax base aggregation

For taxpayers, clear and understandable rules increase certainty and decrease costs of compliance. As applied to unitary taxation systems, simplicity in rules of consolidation should be balanced with flexibility, which allows for rules that accurately consolidate and apportion the tax base to reflect the economic substance of the income-producing activity. For example, entity-level consolidation defines the tax base of a single legal corporate entity including its branches (PEs) across jurisdictions. Although this approach serves goals of simplicity by staying within the boundaries of the legal entity, it may not reflect the economic reality of the shared value creation inherent in a multinational corporate group. Aggregation on the basis of a unitary business principle, required in the US for constitutional reasons, can lead to disagreements and hence lack of clarity. On the other hand, consolidation of income based on a control test such as corporate voting stock ownership may provide a definitive threshold, but may also consolidate unrelated business lines, allowing groups to game the formula. Perhaps the best approach would be a control test, but with power to exclude unrelated business activities as an anti-avoidance rule.

Tax base apportionment

The factors of the apportionment formula operate as proxies for economic activity to split the tax base among jurisdictions, on the basis of the actual presence of the firm in each country. Thus, an apportionment formula should balance the supply side (either in the form of human or physical capital or both), and demand side (in the form of gross receipts of revenue). This balancing of production and consumption factors in the apportionment formula also increases cross-country equity. Although many jurisdictions may have large consumer markets as well as manufacturing or service sectors, and would benefit equally from both types of factors in an apportionment formula, less developed economies with smaller consumer markets (in relation to their level of production) or lower wage levels (in relation to global wage levels) would capture less revenue under a balance weighted toward consumption or a payroll factor only determined by remuneration amounts. The labour factor in the EU CCCTB, which balances remuneration costs and headcount, promotes cross-country equity because it takes into account different wage levels across EU member states. Importantly, the destination-based sales factor should be complemented with a throwback rule, which assigns sales that take place in a non-taxable state back to the state of shipment.

Transparency

For governments, the most critical factor in ensuring the administrability of any system of unitary taxation is having enough information to accurately assess a tax on income. In this regard, a combined report including all income-producing activities under consolidation is essential. If consolidation is water's edge, the report should include income-producing activities of the firm in all jurisdictions within the water's edge territory. If consolidation is worldwide, the report should include income-producing activities of the unitary business in all jurisdictions worldwide. Moreover, a worldwide combined report may be necessary for jurisdictions that incorporate part of worldwide income under water's edge election rules, or anti-abuse provisions that include income from low-tax jurisdictions. In any case, worldwide combined reporting, regardless of the level of tax base aggregation, gives tax administrations a better picture of the taxpayer's income-producing activities and removes informational barriers that would impede assessment and audit procedures. It should also be noted that a region that applies formulary apportionment internally could combine this with full-inclusion CFC rules with a foreign tax credit (residence-based worldwide taxation, discussed in Chapter 1). This would be most relevant for regions such as the EU, which include the home countries of many MNEs. If this occurred in conjunction with the reassertion by the US of effective CFC rules (though with a lower tax rate than at present), there could be a significant shift towards worldwide unitary taxation.

Conclusions

As the case studies elaborated above demonstrate, the development of the tax base definition, the method of aggregation or consolidation, and the apportionment formula, are all areas that require political agreement. And even with political agreement on these issues, unitary taxation does not offer or require complete tax harmonisation. Only the full uniformity of tax rates, base and incentives/subsidies would provide full tax neutrality. Thus, in balancing state sovereignty with market integration, unitary taxation presents a solution in the middle ground. Allowing participating states to choose their own tax rates, incentives and/or formula factors, would still allow space to exercise national priorities for revenue generation. Although economists have shown the ability of aggregation and apportionment systems to satisfy both efficiency and inter-nation equity demands (Sörensen 1990: 16-19), it has recently been argued that formulary apportionment carries a 'significant risk of distortion' and that tax competition would be more intense than under the current separate entity-arm's length transfer pricing system as 'countries have an incentive to attract factors of production represented in the apportionment formula' (IMF 2014: 41). The purpose of a unitary approach, however, is not to completely eliminate tax competition – only full tax harmonisation could accomplish that. Agreement on minimum effective corporate tax rates would be a significant step in that direction.

The aim of a unitary approach is tax cooperation between countries. As a mechanism to aggregate and share out the inter-jurisdictional tax base of taxable profits, a unitary approach provides simple, administrable and transparent rules to minimise disputes, increase taxpayer certainty, provide profit and loss transfer for multinational corporations, and lower compliance costs. Empirical work to date demonstrates that there would be distinctive winners and losers in a global unitary approach, and the losers would be jurisdictions that lack substantial economic activities, or so-called conduit countries (IMF 2014: 40; see also Chapter 7 in this volume). If aligning taxation with economic value creation is the desired outcome, continuing to rely on increasingly complex guidelines for internal price-setting between artificially-segmented entities is not likely to get us there. Extrapolating from the federal models of company income taxation from this study, however, global adoption of unitary taxation will require a big leap for international tax cooperation.

Notes

1. 92 U.S. 575 (1875).
2. Miller Brothers Co. v. Maryland, 347 U.S. 340, 344-45 (1954).
3. Complete Auto Transit, Inc. v. Brady, 430 U.S. 274, 279 (1977).
4. Tax Comm'r of the State of West Virginia v. MBNA America Bank, 650 SE 2d 226(2006), cert denied sub nom, FIA Card Services N.A. v. Tax Comm'r of West Virginia, 551 US 1141 (2007).
5. Mobil Oil Corp. v. Comm'r of Taxes State of Vermont, 445 US 425. 438 (1980).
6. Underwood Typewriter Co. v. Chamberlain, 254 U.S. 113 (1920).
7. Taxation of the income from intercantonal business activities of a corporation is based on tax domicile. Primary tax domiciles are, in most cases, the place of corporate registration, while secondary tax domiciles are classified as PEs of the corporation. Specific tax domicile arises through ownership of real property in a jurisdiction that is not the primary tax domicile.
8. A PE has been defined in Swiss Supreme Court case law as a lasting physical installation or facility in which a qualitative and quantitative material part of the commercial or technical activities of an enterprise is exercised. Intellectual property or accounts receivable by themselves cannot create a PE; physical presence is required.
9. If a measure is challenged under state aid rules, its evaluation under the Code is suspended. State aid rules do not apply to dependencies of member states, such as the Netherlands Antilles, the Channel Islands and Isle of Man, but they have been applied to Gibraltar.
10. The Directive uses the word 'consolidation', though the starting point is the financial accounts of each member; the procedure is the same in the US, as stated above. For further discussion, see Chapter 5.
11. The factor weighting was modified by the European Parliament, which assigned a 45% weighting to both the labour and asset factors and 10% to the sales factor.
12. Payroll is comprised of salaries, wages, bonuses and all other employee compensation, including related pension and social security costs borne by the employer, and should be equal to amounts deducted by the taxpayer within the year.
13. Kenya Income Tax Act 2006 s.18; Tanzania Income Tax Act, s. 33; Uganda Income Tax Act, §90-91, cap 340. There are also Transfer Pricing Regulations 2011 and Transfer Pricing Practice Note 2012.
14. See Valadão (2009: 211). The Olivos Protocol on Dispute Settlement, which created a Permanent Tribunal (arbitral), as well as a post-decision control mechanism for Mercosur, was approved in 2002. For other constituent Mercosur treaties, see www.mercosur.int/t_generic.jsp?contentid=4002&site=1&channel=secretaria&seccion=3.
15. It is worth mentioning that among the changes in the new version of the CAN DTA is the introduction of a provision similar to Art. 9 of

the UN and OECD Model Conventions (Art. 7. *Empresas Asociadas o Relacionadas* [Associated Enterprises]). It allows for the application of transfer pricing adjustments (by applying the arm´s length principle embodied in this article) in operations between associated enterprises in the context of the DTA.

16. The Constitutive Treaty of the Union of South American Nations entered into force on 11 March 2011; negotiations began in 2004, and the treaty was concluded in 2008. All 12 countries of South America joined the Association (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela).

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Taxing Multinational Enterprises as Unitary Firms

Editor Sol Picciotto

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The international tax system needs a paradigm shift. The rules devised over 80 years ago treat the different parts of a multinational enterprise as if they were independent entities, although they also give national tax authorities powers to adjust the accounts of these entities. This creates a perverse incentive for multinationals to create ever more complex groups in order to minimise taxes, exploiting the various definitions of the residence of legal persons and the source of income. While states may attempt to combat these strategies, they also compete to offer tax incentives, many of which facilitate such techniques to undermine other countries' taxes.

Several alternative approaches have been identified, which start from the economic reality that multinationals operate as unitary firms. These include residence-based worldwide taxation, under which the ultimate home country of a multinational taxes its worldwide profits but with a credit for equivalent foreign taxes paid; a destination-based cash flow tax, which attributes the tax base to the country of ultimate sales to third parties; and unitary taxation with formulary apportionment, which apportions the firm's consolidated profits according to factors reflecting its real presence in each country.

This volume outlines the nature of the problem and discusses attempts to resolve it, including the recent G20/OECD project on base erosion and profit shifting (BEPS). It then explores unitary taxation with formulary apportionment, especially from the viewpoint of developing countries. The contributions discuss how to move towards such a system starting from the current rules; the role of accounting in defining the consolidated tax base; lessons from the experience of existing formulary systems especially in the USA; evidence from quantitative studies of tax base misalignment under current rules and the possible effects of different apportionment formulas; specific issues in the finance and extractive industries sectors; and the prospects for regional adoption.

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