Sharing the Wealth

Richard Bird and Jack Mintz

Draft November 22, 2018

*Prepared for the Conference on “International Tax Cooperation: The Challenges and Opportunities of Multilaterlism” Oxford University Centre for Business Taxation, December 10 and 11, 2018.

I. Introduction

Over the years, much has been written about international cooperation with respect to the corporate income tax. Policymakers have taken up some of the issues through international tax treaty coordination at Organisation for Economic Cooperation and Development (OECD) including the Base Erosion and Profit Shifting (BEPS) project, the United Nations Double Taxation Agreement, and through tax advice to developing economies through the World Bank Group and International Monetary Fund. Some analysts have gone further, discussing a World Tax Organization to administer a unitary corporate income tax (Tanzi 1995, Mintz 1999, Picciotto 2012 and Sawyer 2009) along the lines of the multi-jurisdictional corporate taxes found in the United States and Canada (Weiner 2006). Developing countries, especially those with important resource sectors, are seeking a greater share of corporate tax revenues (Siu, Picciotto, Mintz and Sawyerr 2015). The European Union has been discussing for almost two decades now a harmonized corporate income tax, similar to those in Canada or the United States, although as yet without success.

Lawyers and accountants concerned with international tax have had a hard time keeping up with the OECD's BEPS initiative, such resulting developments as the new emphasis on country-by-country reporting, and important changes in the United States – e.g. FATCA and the recent important changes in the tax treatment of international income – and elsewhere. Economists have been similarly occupied in analyzing and estimating the likely impacts and effects of all these proposals, and changes. Much of this recent activity has been driven by the growing public perception that it is unfair for a country to lose tax revenues as its multinationals shift income to low-tax jurisdictions through tax avoidance, leaving to domestic residents the burden of paying for public services. In addition, many tax administrations around the world, spurred on by the release of the Panama Papers and similar newsworthy events, are now investigating rich taxpayers who have broken rules to evade taxation (evasion being illegal, as opposed to anti-avoidance which is the use of legal means to reduce tax).

Much has already been learned from the extensive research on how income tax systems of different countries interact. But surprisingly little attention has been paid to a more fundamental question that often determines international fiscal relations: who gets how much? The politically critical issue in international tax matters is less how efficiently international income is taxed (the size of the pie) than how countries can ensure that they get what they consider to be their 'fair share' of the pie (Bird and Mintz 2003). How is (potential) fiscal wealth shared among countries and how should it be shared?

Sharing the wealth is particularly difficult because it is essentially a "conflict of claim" over resources (Mintz 2018a). To satisfy such conflicts of claim between governments peacefully, some must agree to some form of explicit or implicit transfers to others. There is no global or international dictator or elected government with the political power to determine transfers: sovereign countries must agree on the distribution of resources, and agreement is invariably difficult because some countries lose revenue to others.

We explore some aspects of these questions in the present paper by comparing two completely different fiscal approaches to sharing the wealth and discussing the lessons they seem to offer for international tax reform in general. In Section II, we consider what seems likely to become the world's first effective 'global tax' – the obligatory payments imposed by the United Nations Convention on the Law of the Sea (UNCLOS) on deep-sea mining on the extended continental shelf. In Section III, we briefly review a very different approach to 'globality' (or least 'regionality') illustrated by the long-standing efforts to harmonize corporate income taxes within the European Union. Finally, in Section IV, we discuss why (and whether) the rather unpromising approach taken in the UNLCOS negotiations – although not yet fully in operation - was more successful than the lengthy negotiations between member states of the EU in recent decades over a much simpler tax issue, and what lessons these two cases may offer for international tax reform in general.

II. The Kraken Wakes?[1] Article 82 of UNCLOS

Over the years many have attempted to devise and implement some form of 'global tax,' often as a source of additional finance for poor countries. Until now, none of these attempts has succeeded (Bird 2018). The reason is simply because one cannot have an effective global tax without an effective global government -- or at least a sufficiently strong degree of widespread international agreement on both the form of the tax and the use to be made of its proceeds to establish a broadly acceptable 'virtual' global framework.[2] The main, and until now only, real example of this alternative approach may be found in its entirety in Box 1, which contains the full text of Article 82 of UNCLOS. After lying dormant and undisturbed at the bottom of the sea bottom for years, this provision now seems about to surface in the extended coastal shelf off eastern Canada, for the reasons set out briefly in Box 2.

Even a cursory glance at the text of Article 82 shows, however, that it is far from clear exactly what this means for Canada, the relevant oil firms, or the world in general. This Section discusses why Article 82 exists, why it is as vague as it is, what it might mean, how it may perhaps be implemented in the Canadian case, and what all this may mean for global and international taxation. First, we outline the key role that Article 82 played in the long process of negotiation and compromise that resulted in the establishment in 1982 of UNCLOS -- a multilateral instrument that entered into force (after some modification) in 1994 and has now been ratified by 167 countries plus the European Union and signed (though not ratified) by an additional 14, including the United States. We then turn to a brief discussion of the key issues that need to be dealt with before Article 82 can be implemented anywhere, with specific reference to Canada. We conclude by noting the potential importance of how Article 82 is implemented in this case not only for the future extension of the underlying 'common heritage of mankind' principle underlying UNCLOS as and when deep-sea mining becomes reality but also for international tax reform in general.

[1] Far, far beneath in the abysmal sea/ His ancient, dreamless, uninvaded sleep/ The Kraken sleepeth (Alfred, Lord Tennyson, *The Kraken*).

[2] The first of these points is developed in Bird (2018); the alternative approach is explored in the present paper.

BOX 1

Article 82 of UNCLOS

Payments and contributions with respect to the exploitation of the continental shelf beyond 200 nautical miles

1. The coastal State shall make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.

2. The payments and contributions shall be made annually with respect to all production at a site after the first five years of production at that site. For the sixth year, the rate of payment or contribution shall be 1 per cent of the value or volume of production at the site. The rate shall increase by 1 per cent for each subsequent year until the twelfth year and shall remain at 7 per cent thereafter. Production does not include resources used in connection with exploitation.

3. A developing State which is a net importer of a mineral resource produced from its continental shelf is exempt from making such payments or contributions in respect of that mineral resource.

4. The payments or contributions shall be made through the Authority, which shall distribute them to States Parties to this Convention, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the land-locked among them.

BOX 2

Canada – Where Article 82 Is Likely to be First Implemented

Several promising discoveries from exploration drilling in the Flemish Pass area, approximately 300 nautical miles from the province of Newfoundland & Labrador in eastern Canada have been reported in the last few years, with a $6.8 billion project by a Norwegian company recently being announced in the Bay du Norde field (Antle 2018) and additional exploration and discovery licenses being issued for other fields in the area and elsewhere on Canada's Atlantic continental shelf (Harrison 2017).

Even if the Bay du Norde project proceeds as scheduled, it is unlikely to produce any oil before 2025 or any payments under Article 82 until 2030 or so. How large those payments may be and who will bear the cost depends on the volume of production, the price of oil, and a variety of design issues yet to be settled, as discussed later. One rough early estimate of the potential Article 82 revenue over the likely life of the field was $1 billion (Doyle 2014), an amount that may not be much relative to the potential worth of the field (Rodgers 2015) or even relative to the corporate income tax and royalties collected by the governments of Canada and Newfoundland & Labrador, but would certainly be a lot of money to pass through the hands of the agent specified by Article 82 with distributing the funds, namely, the International Seabed Authority (ISA) created by UNCLOS (and physically located in Kingston, Jamaica) – an agency with a current annual budget of less than $10 million.

Canada's jurisdiction over the territory in question – asserted well prior to UNCLOS (Gault 1985)[3] - seems unquestioned, although the outer limits of its 'extended' continental shelf have not yet been reviewed and accepted by the Commission on the Limits of the Continental Shelf (CLCS), the group of technical experts established by UNCLOS to settle such matters. CLCS has in fact so far agreed

[3] See also the discussion in Harrison (2017).

on such limits with respect to only 29 of the 84 submissions (including some partial and revised submissions) to date[4] and only seven countries – a rather unlikely group including Australia, France, Ireland, Mexico, Niue, Pakistan and Philippines – have so far formally deposited the required documents showing the outer limits of their continental shelves (Lodge 2017). Canada's submission (with respect to its Atlantic coast only) was received by the CLCS at the very last date allowable in December 2013 and formally presented only in February 2018 (CLCS 2018). With 45 earlier submissions in the queue, all being considered in strict order of the time of submission, formal acceptance of – or any problems with - the Canadian submission seem unlikely to be forthcoming for some years. However, we simply assume here, as seems likely, that it will be accepted and that Canada's jurisdiction over the impending oil production in this area is undisputed.

II.1. The Origins of Article 82

Article 82 emerged from more than a decade of international meetings and discussion in the 1970s. The tale is much too complex to be told here, but the parentage of the Article is clear. Two key influences on the UNCLOS negotiations were on the one hand the idea of the Common Heritage of Mankind (CHM) and on the other the desire of coastal states to exercise as full sovereignty as they could over the broadest possible definition of "their" territory. Despite its grandiose name, the concept of the CHM is not hard to understand. It was clearly articulated in a famous speech to the United Nations General Assembly in 1967 by Ambassador Arvid Parvo of Malta, in which he proposed that the seabed (ocean floor) beyond the limits of national jurisdiction as well as its subsoil should be declared the 'common heritage of mankind' and not subject to national appropriation.[5] Unlike most speeches anywhere, let alone at the UN, this speech launched a thousand others over the next 15 years and led first to a 'declaration of principles' with respect to the seabed in 1970, then the Third United Nations Conference on the Law of the Sea in 1973, and, finally, agreement on UNCLOS in 1982, to enter into force in 1994.

Throughout this discussion, the CHM concept was of course held especially dear by those with the greatest stake in its acceptance -- the developing countries unlikely to be able to exploit deep resources on their own and land-locked countries with no direct access to the ocean and hence no territorial claims of their own to defend. Developed countries like the United States and Canada with broad coastal shelf claims and the actual or potential capacity to exploit undersea oil and mineral resources were, unsurprisingly, considerably less enthused about accepting limits to their existing and prospective rights, let alone paying for them. In 1971, Malta again took the lead in resolving this issue by submitting a draft treaty proposing that coastal states should "transfer to the [proposed] International Ocean Space Institutions a portion of the revenue obtained from the exploitation of the natural resources of national ocean space."[6] While the initial reaction of coastal states was not supportive, as the discussion proceeded this innovative proposal that countries should make a contribution to the international community with respect to resource development within their own national jurisdiction ended up not only being supported by the US delegation to the UNCLOS conference but also, in the form of Article 82, as a key element

[4]http://www.un.org/depts/los/clcs_new/commission_submissions.htm (accessed October 23, 2018).

[5] This account draws on Tuerk (2017); for a brief overview, see Taylor (2011). As Franckx (2010) notes, the common heritage principle has also come up in discussion of the Antarctic and outer space. However, the Antarctic Treaty of 1959 does not even mention it and although the so-called Moon Treaty of 1979 – the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies - does mention it, it does nothing to institutionalize it. UNCLOS stands alone as the first and so far only concrete manifestation of the CHM concept.
[6] As quoted by Chircop and Marchand (2003, p. 285).

in the eventual overall compromise with respect to the continental shelf regime embodied in UNCLOS.[7]

The US and other states (including Canada) that had nothing to gain directly from Article 82 ended up supporting it largely because they had much to gain from acceptance of UNCLOS as whole – although in the end the US, though it did finally sign the treaty in 2004, has never ratified it.[8] Negotiating sovereign rights over the continental shelf turned out to be central to successful completion of the long and complex negotiations leading to the 1982 agreement. Coastal states wanted to strengthen their claim to an 'extended' (or 'outer') continental shelf beyond the 200 nautical mile (NM) exclusive economic zone (EEZ) that had been earlier agreed.[9] The extent to which those, like the US, Russia and Canada, with a broad margin extending beyond this limit could claim exclusive rights to exploit (non-living) resources within this extended margin – up to 350NM or perhaps even further--is supposed to be determined technically in accordance with Article 76 of UNCLOS.[10] To secure agreement to this extension, however, and to maintain the critical initial agreement, accepted by all parties involved in the discussion, that UNLCOS was a 'package deal' so that all parties had to agree to all provisions, it had become evident that it was essential for the countries that would benefit from having their claims accepted internationally to, so to speak, pay some dues to the many developing countries that strongly supported the CMH principle and feared the extended expropriation of ocean resources by a few wealthier countries. The revenue-sharing provision in Article 82 was thus arguably central both to the acceptance of extending coastal control over the outer (beyond 200NM) continental shelf and the acceptance of UNCLOS as whole.[11]

II.2. Interpreting Article 82

When removed from the world of "might makes right," international politics, like domestic politics, almost always requires compromise – all parties end up having to give up something they value in return for something they (presumably) value more – to reach agreement. Compromises

[7] The permutations between the initial formulation and the final wording of Article 82 are discussed by Chircop and Marchand (2003) and summarized in an Annex to their paper.

[8] There is a large literature on the US reluctance to go all the way with UNCLOS: see e.g. Sandalow (2004) and, for a recent (critical) review, Bonner (2013) as well as Nemeth et al. (2014) for an overall view of the potential gains to all, including the US, from UNCLOS. Prows (2007) discusses how the so-called Implementation Agreement of 1994, although not strictly a modification of UNCLOS, in effect altered the operating procedures set out in UNCLOS to make it sufficiently acceptable for countries like Russia, France, Germany and the UK to ratify as well as for the US to sign (though not yet ratify) UNCLOS. Since some (e.g. Longtain 2015) argue that, unless and until the US accepts the revenue-sharing set out in Article 82, its claim to the right to exclusive exploitation of the outer continental margin in some sense appears to remain legally uncertain – though likely as good as Canada's similar claim (see note 11 below). This story is not yet over, and lawyers and politicians will likely continue to argue these matters for years to come.

[9] 200 nautical miles is approximately 370 kilometers.

[10] We do not explore here the complex issue of how the limit of the outer continental shelf is determined (see also Box 2): for discussion, see Franckx (2010) and Subdedi (2011). As non-lawyers, it does seem to us, however, as McDorman (2002) said, that the Commission on the Limits of the Continental Shelf (CLCS) charged with deciding such matters is very much "a technical body in a political world."

[11] Many (e.g. Lodge 2006) have argued that Article 82 is 'packaged' with Article 76, which sets out how the limits to claims for the extended continental shelf may be formalized. However, as Harrison (2017) argues, although Canada did explicitly accept the need for some compromise to obtain agreement to UNCLOS as a whole, it had also made it clear from the beginning that because its legal right to control exploitation of this area was already clearly established before the discussion leading up to UNCLOS took place, Article 82 was in no way considered a trade-off for rights it already possessed. (See also note 8 above.)

are usually messy, complicated, and often acceptable only if presented in rather vague language that permits everyone involved to emphasis their gains, rather than the price paid for them. Article 82 is very much a 'shallow compromise' in this sense (Kanehara 2008), and like most such compromises it provides considerable scope for different interpretations and little guidance on how it is to be implemented in practice. Even a cursory reading of Article 82 (see Box 1) makes it clear that one must probe much more deeply if this provision is to be implemented: what exactly does much of the language in this Article mean? How exactly is it supposed to be applied? Who is supposed to do what, when, and how? How are any of the inevitable disagreements among parties supposed to be resolved? Since none of these questions can yet be answered with certainty, all we can do here is to present what seem to us to be the most likely interpretations of Article 82, leaving for the next section the question of how it might work in the specific case of Canada.

Despite its ambiguity, several key aspects of Article 82 are clear:

1. The basic obligation is on the coastal state to make a payment – which we shall henceforth call, for convenience, a 'royalty.'[12]
2. This payment is to be made "annually", after an initial grace period of five years from the beginning of "production" of a non-living "resource" at a "site", with an initial rate of one percent of "the value or volume of production" increasing by one percent each year until it reaches the top rate of 7 percent in the 12th year of production.
3. "Production" does not include "resources used in exploitation."
4. "Developing states" which are "net importers of a mineral resource from its continental shelf" are exempted from paying these royalties.
5. Royalties are not paid "to" the International Seabed Authority (ISA) but "through" it and are to be distributed to its members (the signatories of UNCLOS) on the basis of "equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the land-locked among them."

The precise meaning of all the numerous words included in quotation marks in this list is far from clear. From a tax perspective the major problem in implementing with Article 82 is that, while it clearly sets the tax rate, it is exceptionally vague when it comes to defining the tax base.[13] For example the base for royalty calculations is to apply a percentage rate to the well-head price or a per unit royalty multiplied by the extracted oil. The well-head price is usually derived by taking an appropriate market price to which the oil would be transported, adjusted for quality

[12] This usage – in which we follow Chircop and Marchand (2003) – is not to be found in UNCLOS, which refers simply to a 'payment' or a 'contribution in kind', and this 'royalty' is not identical to the royalties otherwise payable to the coastal state by the exploiting firm (as discussed later with respect to Canada). Harrison (2017, 498) argues that the language of Article 82 is "…insufficient to create an *in rem* royalty interest." However, since we leave out here any discussion of just what a 'contribution in kind' might be -- an exercise in assumption that would complicate the discussion substantially and seems unlikely to be relevant to the specific case in hand – calling the Article 82 payment simply a 'royalty' is convenient.

[13] As we suggest in the conclusion to the Section, from a broader political economy perspective what is to be done with any Article 82 revenues may turn out be the most difficult and critical issue to be determined by ISA, whose responsibility it is to do so. Now that the day of reckoning seems to be approaching, ISA has begun to think about this issue -- ISA (2013, Annex 6) provides some preliminary (academic) thoughts on what 'equitable sharing' might be -- but it remains unclear how it will be resolved. Many issues need to be worked out before any definitive decisions can be expected on what to do with the money, as and when it arrives in ISA. For example, Lodge (2017) notes that 12 (out of 32) 'land-locked developing countries' are not parties to UNCLOS – what do they have to lose? –, 18 countries (including the US) that have signed UNCLOS have still not ratified it, and only 7 UNCLOS members have so far complied fully with Article 84 (2)'s requirement to supply ISA with full details of the outer limit lines of their portion of the continental shelf.

differences. It is not problematical to measure market prices but a determination of the transport and distribution costs bringing oil to the market must be made. Alternatively, instead of measuring transport and distribution costs one may simply subtract a margin to determine the base, an issue discussed further in Chen and Mintz (2012).

A recent study prepared for ISA (2016) suggests that there is "a consensus"[14] that the tax base should be understood as the gross fair market value at well-head with no deduction of cost elements or financial elements but excluding test production and reinjected and flared gas (see Box 3). Whether one accepts this argument or not, the most basic point that emerges from the relatively scant literature on what Article 82 really means is that it is completely up to the coastal state – the party that must make the payment – to decide how the Article 82 payment is to be calculated and paid. In practice, then, all these matters will in practice be decided entirely by Canada in the first instance, assuming that in doing so it acts in what is rather touchingly referred to in discussions of treaties as 'good faith.' It is not at all clear what anyone who does not like what Canada decides can do about it because there is no institutional structure within which its decisions may be challenged.[15] Article 82 may thus be the first real 'global tax' but its effectiveness depends entirely on the willingness of the paying state to 'do the right thing.'[16]

BOX 3

What Does Article 82 Really Mean?

According to ISA (2016), p.10, "the consensus is that the attributions of meaning set out below are appropriate for Article 82":

1. "Value and volume" both relate to gross commercial production (ready for processing or market distribution) at wellhead, excluding test production and reinjected and flared gas but with no deduction of cost elements or financial resources. The base is the same whether a value or volume calculation is used, regardless of whether the obligation is discharged through payment or contribution in kind.
2. "Site" is the geographic location of a resource but may be a delineated field or a site as defined by the coastal state.
3. "Payment" should preferably be made on a regular basis in a convertible currency.

[14] This 'consensus' seems to be based largely on two earlier studies prepared by Canadian lawyers (Chircop 2013, and Spicer 2015), which may not be surprising, given that the first cited prepared the working paper on these matters reproduced in ISA (2013) and the second is a co-author of ISA (2016). Nonetheless, ISA (2016) does provide a good summary of what has been published to date on this subject. For alternative interpretations on some points, see Harrison (2017).
[15] An elaborate dispute resolution mechanism is set out in UNCLOS (Part XV) but, as, recognizes it does not seem to cover Article 82 (ISA 2009, 65). While ISA could perhaps seek an advisory opinion on an Article 82 issue from the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea, no one can compel any coastal state to comply with its obligation. Even in states that have fully ratified UNCLOS, treaty provisions govern domestic law only when they become domestic law and cannot be enforced by outside authorities. Since, as McDornan (2010, 5) notes "…no one wants to reopen the compromises and trade-offs that were and are central to UNCLOS," this situation seems unlikely to change soon. While ISA could apparently only when the coastal state concerned agrees.
[16] We are reminded of a famous observation by Machiavelli (1513/1950, p. 344) to the effect that in some German towns public funds were collected in just this way: "…every citizen presents himself before the collectors of this impost, and, after having taken an oath to pay the just amount, deposits in a strong-box provided for the purpose the sum which according to his conscience he ought to pay, without any one's witnessing what he pays." Such honesty, he says, "…is to be admired since it is so very rare" going on to suggest that it was perhaps feasible only because of the "perfect equality" to be found in these communities and the fact that all citizens are known to each other. This is not the world in which we live.

4. "Annually" may mean either a financial or calendar year and payments may, if preferred, be made throughout the year

The same study shows that the existing practice on such matters in royalty agreements varies substantially from country to country. For example:

- "Site" may mean the lease, well, field, unit, or project area; in Norway, the entire offshore area constitutes one taxable site.
- "Payment" is usually required in domestic currency, although Brazil and Russia specify how currency conversions may be performed.
- Most countries do not define "annually" and in fact have a shorter assessment period for royalties: for example, the US and Brazil (and indeed most countries) require monthly payments.
- Royalty rates are seldom flat and are usually adjusted in various ways – to compensate for risks and expenses or to encourage certain types of production or production in general.
- Few jurisdictions have rules relating to contributions in kind, and those that do (US, Canada) usually permit the deduction of transportation expenses.
- Transportation and other distribution costs are as a rule deductible in some way in most agreements. Some jurisdictions, especially those (Norway, UK) which tax on a net (profits) base, also allow deduction of certain other operating and capital costs. Some (e.g. Australia, UK) also allow certain deductions for reasonable or unavoidable losses, and those that tax at a point in the process in which products have been processed to some extent also usually allow processing costs to be deducted. Some have certain deductions for production costs e.g. test production.
- Market value may be based on actual sales prices, or by calculations using market prices or values prescribed by the regulator. The second approach is often employed when sales are non-arm's-length (between affiliated parties).

II.3. Implementing Article 82: Mines Lurking Below the Surface?

The Article 82 ball is thus clearly in Canada's court. What Canada does, however, may be important not only to Canada, the province of Newfoundland & Labrador, and the oil companies involved. How this initial implementation of Article 82 plays out may perhaps provide something of a precedent or model for other jurisdictions in later years – and perhaps even for ISA itself as and when deep sea mining enters into commercial production, and its task becomes not only to ensure the 'equitable sharing' of the benefits from exploitation of this common heritage of mankind (something it is going to have to do for Article 82 revenues) but also to determine how best to capture those benefits (a task that Article 82 leaves in the hands of the coastal state).[17]

Given the complexity and variability of how oil and gas revenues are assessed, collected, and enforced around the world, all we do here is first to sketch briefly the existing royalty arrangements in the NL offshore region, the role of Canada in determining how the Article 82 provisions may apply, and how this provision may perhaps end up being applied in practice.

Fiscal regimes for the oil and gas (O&G) industry have three components: revenue policy, revenue administration and revenue management. Most analytical attention is focused on revenue policy – how the public sector gets revenue from the O&G sector. Most public attention focuses more on how any revenue collected is managed and spent. The key link between these two

[17] ISA has already issued 29 exploratory licenses beyond the extended continental shelf ("Seabed Mining" 2018).

perspectives is revenue administration, which encompasses the organization and management of the process of assessing, collecting and enforcing revenue from the sector, which seldom fits neatly within the general tax administration framework and is also often subject to special regulatory regimes. When it comes to taxing 'upstream' O&G[18] every country is in a different position because its objectives, administrative capacity, and piece of the O&G sector differs and because even within O&G every project has very specific characteristics that are largely unknown and often volatile. As a result, substantial uncertainty surrounds many key features affecting revenue yields – oil prices, operating and capital costs, risk tolerance, etc. – and the best way to tax a country's oil sector is invariably difficult to identify and unlikely to be the same everywhere, as shown to some extent by the variety of royalty systems applied by different jurisdictions (e.g. ISA 2016).[19]

However, although raising revenue from oil production is seldom simple, it raises no unique problems. As Calder (2014, 2) puts it, "conceptually, the upstream natural resource industry is not exceptionally complex. Essentially, people make holes in the earth, take stuff out, and move it an export point or to a domestic refining or processing plant." This is obviously simplistic: considerable exploration and development usually is required to find offshore oil based on seismographic interpretation, and it is extremely expensive to drill for just one exploratory well in the case of these projects. Once found, large platforms are required with equipment to drill long distances in the water in a safe manner. Operation is also expensive. Workers are usually transported to rigs by helicopter or, recently, some rigs may be autonomously operated, requiring a certain degree of innovation and scientific expertise. Non-renewable resources have high levels of exports and imports, require substantial capital investment, have long development and operating lives, are geographically concentrated, and are carried on at different scales and with very different levels of profitability. None of these characteristics is unique to offshore oil and gas production, though the combination may be, and there is often considerable risk and uncertainty about the extent even a potentially high level of economic rent will in fact be realized.[20]

Many countries have created a special regulatory and fiscal regime for O&G in part because the resource being extracted is (in most jurisdictions) public property and in part because of the concentration, size and volatility of the potential revenue at stake. Although the process of offshore oil extraction may be difficult, costly, uncertain, and technologically complex, the 'stuff' produced can be physically measured and its value established by internationally quoted prices, as mentioned above, which is the "well-head price" after deduction of eligible costs (it is the latter that often leads to disputes with authorities). Moreover, since oil is usually produced by relatively few firms operating under (at least potentially) tight government control, it is in principle easier to

[18] The petroleum value chain is usually divided into activities 'upstream' of the production of crude (exploration, appraisal, development, and production) and such 'downstream' activities as refining, processing, marketing and distribution, with the latter (including such ancillary services as transport and storage) usually subject to the normal tax regime (World Bank 2009) although some transport and storage of crude prior to refining – sometimes called 'midstream' – is often included in the upstream sector when special O&G fiscal regimes exist.

[19] Some countries have some variant of a production sharing agreement (PSA) instead of the kind of the royalty systems discussed here. Although how such agreements work is usually even less transparent than royalties, depending on the precise nature of the agreement, the economic impact of such systems, which are not further discussed here, is often similar to that of royalties even though PSAs are usually outside the scope of the general tax regime.

[20] In Canada, for example, because the opportunity cost of the resources in the ground is effectively zero, value-added is highest in the sector extracting non-renewable resources (Tombe 2015), although, as Boadway (2015) shows it can be very difficult to measure and tax those rents except through a cash-flow approach, a point we return to briefly later.

tax than many mining activities. Still, the rent-producing potential of the O&G sector – and, equally importantly, the uncertainty with respect to the extent that this potential will be realized – make it important to ensure that the sector generates at least the normal level of risk-adjusted returns expected from non-resource industries and does so without either unduly discouraging oil production or making fiscal management too difficult owing to unpredictable swings in revenue collection. Ideally, how offshore oil is taxed should bolster revenue, stability, and economic efficiency while also paying due attention to the delicate political balance between compensating the public owners of the resource and providing adequate rewards for those providing the risk-bearing capital.

This is no simple challenge, so it is no surprise that every country has responded to it in different ways (for a recent international comparison including Newfoundland & Labrador, see Crisan and Mintz 2017). Since the question of applying Article 82 has risen to the surface first in the context of Canada's Newfoundland offshore area, Box 4 sketches the royalty regime now applicable in that area. Instead of exploring in detail just how that system might accommodate the required Article 82 payments – a task mapped out in Spicer (2015) and further discussed in Harrison (2017) – all we do here is summarize a few major points. It is a complex regime that attempts to tax economic rents (income excess of the "normal return to capital" but results in significant distortions once taking into account the corporate income tax).[21]

Canada's first official mention of the possible application of Article 82 was in 2013, when the CNLOPB (see Box 4) notified prospective bidders that "…in order to meet obligations arising pursuant to Article 82…additional terms and conditions may be applied through legislation, regulations, amendments to licences or otherwise" (Spicer, 2015, 16). As Spicer (2015) notes, a few other countries were both quicker off the mark and more specific. For example, Norway tells bidders that they may be required to make Article 82 payments which will, however, be deductible from the taxes otherwise due. The United States, although the US has never ratified UNCLOS, for many years has not only alerted bidders to the possible application of Article 82 but set out just how it proposed to interpret such ambiguous Article 82 terms (see Box 3) as 'site' and 'years of production.

In Canada's case, however, while some commentators (Spicer 2015, Harrison 2017) have discussed the obvious problems in interpreting Article 18, the major issue that has so far been publicly discussed is – unsurprisingly to anyone familiar with Canada – the federal-provincial dimension, which is critical because the resources in question are owned by the province. The provincial government has made its position clear: the federal government signed up to UNCLOS and it is the federal government that is solely responsible for making any Article 82 payments (Antle 2013). Of course, this is not the end of the story. Although it seems unlikely that the existing Canada-Newfoundland Accord will be renegotiated, the federal government might, for instance, decide to impose responsibility for the Article 82 payment on the producer as well as to allow or not allow that payment to deductible for corporate tax purposes. Harrison (2017) suggests that it would not be easy to merge such payments with the existing royalty system because that system allows deductions not provided for the Article 82 the extent that royalties are based on a 'net' rather than 'gross' base.[22] Nonetheless, it would perhaps not be too difficult to incorporate such a payment within the existing royalty framework including creditability against the net royalty paid to Newfoundland & Labrador. Alternatively, although such an

---

[21] For further discussion of the interaction of profit-based and royalty regimes with the corporate income taxes, see Mintz (2016).

[22] See Box 4, and Thrasher and Baines (2014).

outcome seems even less likely than reopening the tortuous federal-provincial negotiations that originally led to the Canada-Newfoundland Accord, Canada could conceivably decide to leave the existing system (Box 4) in place and to make the payment from general funds, perhaps budgeting it as a 'foreign assistance' distributed through a multinational agency (ISA).[23]

What seems more likely, perhaps, is that Canada will adopt a solution – perhaps along the lines proposed by Norway – that will impose at least some of the costs on firms producing oil in Article 82 territory. One preliminary estimate (see Box 5) suggested that the result might be an increase of about $1 a barrel in production costs. Whatever its precise magnitude, any cost increase would of course be expected to have some deterrent effect on investment in offshore deep-sea drilling although Rodgers (2015) suggests that the effect would be minimal. Earlier industry reactions to the prospects of having to bear some or all costs of Article 82 payments were equally sanguine. For example, Mingay (2006), after reviewing a number of comments made on UNCLOS by oil industry representatives, concluded that Article 82 payments would be unlikely to prove a serious disincentive to the already high-risk and costly investments required to discover and exploit deep offshore resources.[24] As he noted, however, at the time he wrote the industry's perspective was clearly "…of a relatively unengaged nature" (Mingay 2006, p.346). With the prospect of real returns now closer to the surface, no doubt the industry will become much more engaged in discussing the extent to which Article 82 payments may impinge on their expected returns. More is likely to heard from this and other quarters as Canada moves closer to deciding just how to handle these payments.

BOX 4

Canada-Newfoundland & Labrador Royalty Regime

Offshore royalties in Newfoundland & Labrador are governed by a 1990 law, which establishes a general regime under which the provincial government establishes specific royalty structures on a project-by-project basis. Under a 1987 Accord between the federal and provincial governments, production licenses (leases) are issued by the Canada-Newfoundland & Labrador Offshore Petroleum Board (CNLOPB), an independent agency reporting to both levels of government and managed by a board with three federal, three provincial members and a jointly appointed chair (https://www.cnlopb.ca/). To date, the federal government has played little if any role in determining the offshore royalty regime.

CNLOPB issues licenses for exploration and exploitation in the offshore area, including the area extending to the outer edge of the continental shelf. Although all current production is from projects within the 200NM line, for years many licenses have been issued for areas beyond this line, that is, in Article 82 territory. However, as Spicer (2015) notes, while some Canadian laws explicitly apply throughout the outer continental shelf, some important services – for example, the legislation dealing with oil spill responses and most Coast Guard services -- do not. On the whole, Canada seems as yet to have done relatively little to prepare for the day when a project in the outer continental shelf begins to produce.

The generic royalty regime now used for offshore oil has two parts. A basic royalty is paid varying according to an "R-factor" – R being the ratio of revenue to costs. A 1% basic royalty

---

[23] A possibility suggested in an early discussion by Chircop and Marchand (2003) and mentioned also by Spicer (2015).
[24] Crisan and Mintz (2017) estimate that the marginal effective corporate tax and royalty rate on new investment in Newfoundland & Labrador is 12.1% in 2017, well below other oil projects in Canada and United States including the oil sands, although above Nova Scotia's effective rate on offshore projects..

applies to revenues if the R factor is between 0 and 0.25, rising to 7.5% if R is greater than 1.25. This basic royalty is credited against a net-royalty, the latter calculated as percentage of the "cash flow" – revenues net of capital and non-capital costs, subject to certain adjustments. The net royalty rate varies from 0 to 50% depending on the R factor (no net royalty is paid if R is less than one and the maximum rate of 50% applies to the net-royalty base when R is greater than 3).[25]

These royalties are payable for each lease in Canadian currency for each month. Interestingly, the federal government, though totally absent at all prior stages of the process comes into the picture at this point since these payments are made to the federal government, which deposits them in the "Newfoundland Offshore Petroleum Resource Fund" – and then pays them all out to the provincial government. In fiscal 2017-18, the estimated payments (all for production with 220NM and hence not subject to Article 82) were $387 million.[26]

At present, as Thrasher and Baines (2014) discuss, there are six separate royalty regimes applicable to various projects in the NL offshore area, detailed and specific to each project, though all are located with within 200NM and hence not subject to Article 82.

BOX 5

A First Estimate of the Impact of Article 82

An early attempt to estimate the impact on investment of applying Article 82 in Canada (Rodgers 2015) assumed that the base of the levy would be gross commercial production (excluding production used in connection with extraction), that the site would be defined as the lease area, and that value would be measured in US dollars, all more or less in line with the consensus view reported in ISA (2016). This study then made two additional important assumptions: (1) that the levy would be paid by producers and (2) that it would be treated as a royalty under domestic law and hence be deductible from corporate profits in calculating corporate income tax.

Two scenarios were discussed: (1) the Article 82 royalty would be fully creditable against domestic royalties or (2) it would not be creditable at all. Rodgers (2015) suggests that countries that considered the new levy to come entirely from economic rent may decide not to credit it while countries that considered they were already capturing the rent -- or that, more probably, simply desired to encourage investment in the industry for any reason -- might go all or part way toward offsetting the Article 82 levy by reducing their own royalties.

After making additional assumptions about costs and field sizes (based on data from a number of offshore operations in the Gulf of Mexico as well the Newfoundland & Labrador offshore), oil prices, transportation costs, and inflation, Rodgers (2015) estimated that the impact on producer rates of return would be to increase effective royalty rates (the 'government share') by about 4 percent (3 percent, after allowing for CIT deduction) in the Gulf of Mexico and by 5 percent in the Canadian case. The estimated net result of the Article 82 levy was on average to reduce net producer cash flow by about $1 per barrel – an amount said to be "…rather minimal, particularly

[25] The intermediate case when the R-factor varies between 1 and 3, results in an incentive to expand the capital base to reduce the R-factor. This leads to a lower effective statutory tax rate that reduces the METRR calculated for investments. We are unable, however, to compute this case due to lack of data. For analysis of the impact of corporate income tax and royalty regimes in Newfoundland & Labrador, see Crisan and Mintz 2016).

[26] https://www.canada.ca/en/treasury-board-secretariat/services/planned-government-spending/supplementary-estimates/c-2017-18-statutory-forecasts.html

in the context of the risks and technical costs involved in offshore deep water oil and gas development" (Rodgers 2015, p. 18).

II.4. **Some Possible Lessons**

Steinmo (2018) and others have shown that a difficult 'leap of faith' is needed to create a sustainable modern state with a sustainable tax system and that such a leap has been made successfully only by a relatively small number of countries, and often over the course of centuries. The world as a whole seems to be a long way from being willing or able to make this leap. Though some significant and sustainable international organizations have been created and funded on a multinational basis for many years, such financing is much closer to 'club fees' than any form of international tax (Bird 2018). The agreement packaged as UNCLOS perhaps comes as close as anything has to setting out a truly global structure which even those – notably the US - who have not formally ratified UNCLOS seem largely to have accepted and found useful. As discussed earlier, a critical component of the compromise between parties with conflicting interests embodied in UNCLOS was clearly Article 82, which gave even the poorest land-locked countries a sense of belonging while providing a reminder of the need to be inclusive and 'fair' in sharing the common home of all humanity that even the richest and most powerful coastal states seem to have considered acceptable. To an optimist, the agreement embodied in Article 82 may thus seem to signal two important steps towards building a common global fiscal framework – the recognition of a common interest in planetary well-being and at least some willingness to share wealth a bit more fairly to achieve that interest.

Now, however, comes the hard part: implementing Article 82. It is one thing to agree on paper to give something away when the time to deliver is safely in the future and the amounts involved are vague. Building the capacity to collect this levy properly without unduly harming economic outcomes is not the problem. As discussed earlier, in effect it is entirely up to the coastal state – in this case, Canada -- how to do this, and no serious technical or economic problems beyond those involved in any royalty system appear to arise. As always when it comes to taxes, however, the real problems are political. Canada can certainly collect the Article 82 payments in a 'good faith' manner though it may well encounter some domestic political problems in doing so in a way that will satisfy Newfoundlanders, other Canadians, the oil industry, and other interested countries, whether those that may themselves soon face similar problems or the potential recipients. Perhaps the most serious issue to be faced may be the need to persuade Canadians (and especially Newfoundlanders) – who will almost certainly consider revenues flowing abroad through the Article 82 mechanism to be money that would otherwise have benefited them – that such payments must be made.

No one seems to have yet discussed this issue, perhaps because those involved have simply assumed that it will not be a problem. We think this is a mistake. In the same way that BEPS and its outcome has been criticized as not facing the fundamental 'sharing the wealth' question underlying the ongoing international tax debate.[27] To put it simply, from a political perspective one cannot and should not consider tax revenue as completely unrelated to what is done with it. People around the world are bothered by international tax evasion not only

[27]See, for example, many of the papers in Pogge and Mehta (2016) as well as such recent works as Herzfeld (2017), Durst (2018), and Dagan (2018). Although none of those cited focus mainly or solely on this issue, all conclude that BEPS and its outcomes fail to deal with the basic problems bedevilling international tax reform and one such problem is definitely who 'should' get what.

because they think is unfair that corporations may end up paying less than their fair share for the costs of providing public services but also because they think that if corporations pay more they will pay less (or, possibly though less probably) that they will get more services in exchange for their own taxes. The fact that some government long ago and far away signed on to Article 82 does not nullify the interdependence of taxation and expenditure in current domestic political terms. If Canadians (or even just Newfoundlanders) think that it is 'their' money flowing abroad, they are going to want to know where it is going and what it is buying. Those who buy fully into the CMH argument will presumably be more accepting, but even they may have a problem if they see some of 'their' oil revenue going to support governments and countries that they distrust.

From this perspective, the main problem with Article 82 is not so much how to collect the money but how to deliver the proceeds in a way that will be broadly acceptable to both coastal states and recipients. If this first practical experience with Article 82 is to succeed in implementing the narrow – and perhaps, the pessimist might say, only passing – (almost) global solidarity embodied in UNCLOS, the International Seabed Authority (ISA) faces a major task in developing a feasible governance structure to provide a sound and transparent way of distributing funds in a way that will be broadly accepted as equitable.

No doubt potential recipients would prefer to get the money with no strings attached: who wouldn't? If everyone were trustworthy and trusted or at least (as is usually the case in federal countries, operating within the same political, legal, and accounting framework), this would perhaps make sense. But the world today is far from satisfying these conditions, so to make the process credible the disbursement side may need much more complete, transparent, and comprehensible monitoring and reporting than the world has yet seen, Whether Article 82 will actually turn out to be the first effective global tax may thus in the end depend more on how well the proceeds are perceived to be spent than on well (or how) they are collected. Recipient countries may consider Article 82 to be no more than a small instalment on what they are owed as their fair share of the common heritage (or perhaps as a payment for their agreement to the extension of the undersea authority of the coastal states), with more to come as and when true deep-sea mining begins on a larger scale. However, even in well-established federations like Canada, with other a half-century of experience with a federal-provincial equalization system, many in 'paying states' seem to consider such payments as simply one side of a fiscal contract and their acceptance of the payments may to hinge to in part on whether they think that the funds are put to uses they consider worthwhile.[28]

Coastal states collecting the Article 82 levy will presumably monitor and enforce this side of the process in their own interest – and, we hope, will also report the results transparently to ISA (and the world). [29] Unless, however, the recipient states are willing to provide similarly open and transparent information on how they use the funds, utilization of this revenue source seems unlikely to do much to build up greater 'social trust' across countries. Article 82 may thus in the end not point the way to any 'brave new world' of global taxation. Even so, however, it may prove to be a first incremental step towards developing a more broadly acceptable and hence more politically sustainable way to deal with the sharing the wealth internationally.

[28] For a recent review of the Canadian experience with equalization, see Bird (2018a).
[29] As discussed earlier, we simply assume Canada will indeed comply with its Article 82 obligations in good faith, but it should be noted that should any disputes arise UNCLOS appears to provide no clear method for resolving them. We return to this issue later.

If so, what lessons can be learned from the UNCLOS experience? First, start small and develop a level of international cooperation and coordination in some specific area by talking and negotiating – perhaps for decades - until reaching a point at which (almost) everyone thinks they have something to gain from agreeing and something to lose if they do not. Second, then move on – always with broad consultation and agreement, which usually means slowly and with much backing and filling – a few simple but broadly acceptable answers to widely recognized problems. UNCLOS and Article 82 accomplished these steps successfully to a greater extent than anyone initially expected. Only now, however, forty years after the initial discussions, are developments in the Canadian offshore opening the critical third phase -- implementation. We shall soon see whether the compromises so hardly won over decades of negotiation will prove strong enough to survive the real prospect of significant additional transfers of real money from richer to poorer countries. A great more cooperation and collaboration than is yet agreed or in place seems needed on all sides to create and implement a sustainable institutional framework within which to accomplish this goal. It may take a few more decades before the results are finally in. Given the time frame required to put into place even this relatively small step toward this particular narrow global fiscal arrangement, it would not be surprising to see the world facing another century or so of negotiation before making real changes in reforming international corporate taxation, where a good deal of money is already on the table and would have to be taken from some and given to others. The next case we consider does little to alter this gloomy forecast.[30]

III. Unitary Corporate Tax with Formula Apportionment

A unitary corporate tax has been an option discussed for decades to overcome the inherent distortion and tax competition that arises from independent corporate income taxes levied according to the arm's length principle under separate accounting systems in each country (Weiner 2006; Mintz 1999). A unitary tax would consolidate national corporate tax bases into a single base for a multinational corporation. The income would then be apportioned to each country based on a formula, like those already used in some countries (Canada, United States, Switzerland and Germany for municipalities). The latest attempt to move towards a unitary tax has been in the European Union to which we first turn.

III.1 European Corporate Tax Harmonization

Almost two decades ago, the European Commission published a proposal to adopt a unitary corporate income tax by consolidating the tax base using a set of single tax rules.[31] The recommendations followed earlier proposals, including the Ruding report (European Commission 1992), to implement a common corporate income tax in Europe.

In 2001, proposals for a consolidated European corporate tax were discussed. One approach included a "European Corporate Income Tax" to replace national systems that multinational companies could opt to adopt. A second approach was "Home State" taxation, which would involve mutual recognition whereby the tax rules of the home country would be used

[30]As a side observation, observing how the world has been handling the relatively simple questions involved in international taxation does not offer much encouragement with respect to our ability to get the world's act together in dealing with environmental issues – at least not until we all accept that we need to do simply to survive.
[31] The studies were released in 2001 and published as European Commission (2002).

to determine the tax base for member EU countries with a tax rate being applied to the base allocated to each province. A third approach was an optional "Common Consolidated Base Taxation" whereby each EU member state would be able to set its own rate on the portion of the consolidated company's base allocated to the member states based on a common definition of taxable profits – companies would be able to opt into the system. A final approach was a compulsory European corporate tax with formula apportionment.

Under both the Home State and common consolidated income tax approaches, the portions allocated to each state would be calculated by a formula as determined by negotiation. The approach would use a distribution of company assets, payroll or sales, similar to that used in Canada and United States or weights based on value-added, for which there is already a common tax base in the EU.

The Commission argued that corporate tax harmonization would bring several economic benefits. It would relieve businesses from compliance with 15 different European corporate tax systems. It would also reduce tax obstacles interfering with flow of capital across borders. Profits and losses would be consolidated for EU companies enabling them to reduce effective tax rates. For governments, a common tax base would reduce the need to administer transfer pricing within Europe (transfer pricing would remain an issue for income earned outside Europe). It would also lessen the scope for profit shifting by shifting intangible income into low-tax EU countries and debt costs into high tax jurisdictions.

While the EU proposals for corporate tax harmonization were partly predicated on reducing economic distortions (economic efficiency), it was not apparent that economic efficiency gains would be significant. Effective tax rates on capital could still vary across businesses in fundamental ways. First, given that each country could still choose its tax rate, companies could reduce tax payments by investing more heavily or hiring more workers in countries with lower tax rates (the weights used to distribute income would be affected by economic decisions, as pointed out by Mintz 1999 and Mintz and Weiner 2002). Second, efficiency gains would be muted if the consolidated corporate tax base were to be optional, applied to some companies instead of others. Third, a EU consolidated corporate tax base would help curtail transfer pricing and other profit-shifting strategies among EU countries but would not deal with tax strategies involving third countries, especially since each EU member would maintain its distinctive treatment of international income under the corporate income tax. Overall, the efficiency gains from adopting a consolidated corporate tax would not be dramatic under these proposals.

The real gains to a consolidated corporate tax base are to reduce compliance costs for taxpayers (Mintz 2004) and administrative costs for governments as well as limiting to some extent the scope for tax avoidance. The increased potential revenue gains from limiting tax avoidance could incent governments to adopt a EU corporate tax base although ultimately, it remains a question as to whether each government believes that it would be better off to have its independent corporate tax subject to arm's length pricing principles than to join an EU-wide unitary tax. In game theoretic terms, governments will not co-operate if their payoff by not cooperating is more than the payoff if they do cooperate (Bird and Mintz 2003). Creating more wealth is one thing – sharing it is another.

After years of deliberations including a new proposal issued in 2011, the European Union negotiations effectively stalled. Some decisions have been made such as dropping the proposal to introduce Home State taxation rather than a consolidated corporate income tax base with an apportionment formula similar to Canada or the United States. A single European corporate income tax was also rejected. The 2011 proposals provided optionality so multinationals could elect to use the common base or not.

In October 2016, the Commission re-launched a proposal to adopt a common consolidated corporate tax base in Europe.[32] Unlike the 2011 proposals, the proposed common base would be mandatory for companies with more than 750 million Euros in revenues. Given the goal of a common base, the proposals included common rules to tackle opportunities for profit-shifting, encourage the use of equity financing instead of debt through an allowance for new equity financing, and encourage incentives for research and development (which, ironically, erodes the tax base with a super-deduction in excess of the cost of R and D).

The 2016 model clearly sets down some markers.

- The apportionment of the common consolidated base of entities in a corporate group will be based on a formula taking into account three equally weighted factors: sales, payroll and assets.
- The rules for determining the corporate tax base would be based on unanimous decisions taken by the EU members. In particular, "the Council shall, acting unanimously ... issue directives for the approximation of laws, regulations and administrative provisions of the Member States as directly affect the establishment or functioning of the internal market."
- The designation of permanent establishment would only apply to those residing in a EU member country – no attempt would be made for the common consolidated corporate tax base to define "permanent establishments" in third countries.
- Losses would be carried forward indefinitely and losses in one country would be set off profits in another for a multinational company. As a first step, cross-border loss deductions would be limited to protect revenues in those countries with tax-paying companies.
- Not only would an incentive be provided for new equity financing, but also net interest expense would be limited by a threshold based on earnings before the deduction of interest, taxes, depreciation and amortization. Many, but not all EU countries, have adopted this specific form of interest limitation rule (Sweden's rule, for example, is based on earnings before the deduction of interest and taxes only).

The EU consolidated corporate tax base proposed in 2016 moved to a more uniform approach providing less flexibility to each state in developing country-specific provisions under their own corporate tax. This obviously makes any agreed upon system more difficult to implement. Not only would the distribution of revenues be an issue for EU member states to consider but also they would have less flexibility to introduce incentives that could only be adopted if accepted by other members on a unanimous basis. In contrast, Canada affords much more flexibility to provinces. Under tax collection agreements (Alberta and Quebec collect their own corporate income tax), the consolidated corporate tax requires agreeing provinces to follow the federal tax base but each province not only chooses its own corporate tax rate but also tax credits for economic policy purposes without agreement of other provinces.

In addition, for some reason, the 2016 proposals introduced two specific incentives at the EU level which do not commonly exist in member states and which both muddy the waters and narrow the tax base. The super-deduction for research and development might be more sensible to

[32] Besides the re-launching of negotiations over the common consolidated tax base, the EU will adopt measures to resolve tax disputes more expeditiously and address "mismatches" with non-EU countries such as hybrid financing. See http://europa.eu/rapid/press-release_IP-16-3471_en.htm. See also an explanatory document: https://ec.europa.eu/taxation_customs/sites/taxation/files/com_2016_685_en.pdf.

generate more research and development than the current patent boxes being used in Europe to attract intellectual property income (but not necessarily create it). However, it is not clear that tax support is the best approach to encourage research and development since many countries also rely on expenditure programs including defense to encourage research and innovation.

The proposals also include an EU-wide adoption of an allowance for new equity financing costs. It wisely follows the Italian approach of limiting the deduction to new equity to limit losses rather than the Belgian approach that applies the allowance to all equity and is hence more expensive. The approach effectively provides both an interest and equity financing deduction to remove the corporate tax bias towards debt (although this is offset to some extent by higher personal income taxes on interest in most countries). This approach converts the corporate income tax into a "rent" tax (income in excess of the normal return to capital), providing opportunities for tax planning for multinationals since most countries including the United States and China assess corporate tax on an income basis. Closely-held companies could also avoid tax by leaving income in the corporation after deducting their equity allowance while owners would only pay tax on capital gains receipts when they dispose their stocks under the personal tax.[33] With a deduction for both equity and interest financing costs, the tax base is narrowed, leading to more companies not paying tax, especially during growth phases or downturns in business cycle. The allowance for corporate equity costs, which has been adopted by a limited number of countries in the past and dropped in some cases, is not commonly used in the EU and would therefore be a major shift in corporate tax policy.

It is therefore quite interesting that France and Germany announced in June 2018[34] a proposal to move ahead with the consolidated corporate income tax applied to all taxpayers, regardless of size and legal form, similar to the 2016 proposals but without EU-wide incentives for research and development or an allowance for new equity financing costs. The two countries also propose a minimum tax on profits to limit deduction of losses. While France and Germany are among the largest members of the EU, it is far from clear whether countries such as Ireland and Luxembourg will agree with the Franco-German proposal.[35]

Why has the EU so far been unable to achieve a unitary approach to corporate taxation, as Canada and the United States have done? The answer likely is simply that a federation is quite different from a union created by a treaty among sovereign governments. The EU does have an elected Parliament but it is one with no taxing powers – its budget depends on grants from the member countries. Member countries have been quite resistant to encroachment on their tax sovereignty.

In the case of Canada, the federal government has the constitutional power to levy whatever tax it wished such as the income tax in 1917. After the Depression of the 1930s, provinces were also willing to rent their own powers over income and estate taxes to the federal government for grants and debt relief. After the Second World War, however, the provinces, especially Quebec and Ontario, wanted control over their own corporate income tax, which ultimately led to an agreed allocation formula to apportion the corporate tax base, largely the same across provinces, according to equally weighted factors based on sales and payroll (assets were excluded to provide more revenue to the Atlantic and Western provinces). The formula has been amazingly stable with few adjustments made despite complaints especially by the resource

[33] For further discussion of these points, see Mintz (2018).
[34] https://www.reuters.com/article/us-germany-france-tax-harmonisation/germany-france-agree-on-harmonization-of-corporate-tax-systems-idUSKBN1JG1RB.
[35]

provinces in the 1970s when they found that they would receive more revenues if more weight on an origin basis such as assets rather than a destination basis associated with sales. But no changes have been made to the formula for decades, reflecting the difficulties of re-negotiating fixed shares in a revenue pie even when – or perhaps especially? – when the size of the pie changes.

The U.S. government has similar constitutional powers over direct taxes with the ability to levy its own income tax so long as it is uniform across states. It introduced the federal income tax in 1916, which included a corporate income tax, that had already been adopted in some states. Today, the states, except for six (including Texas, Ohio and Washington), levy their own corporate income tax choosing or not to harmonize the tax base with federal rules. Unlike Canada, the U.S. corporate tax is consolidated for members of the corporate group and thus the apportionment formula applies to the whole group, as proposed in Europe. The states also choose their own factors to apportion corporate consolidated income of permanent establishments in their jurisdictions. Most states initially followed the Massachusetts formula that apportioned corporate income according to equal weights for assets, payroll and sales (Weiner 2006). Over the years, however, many shifted to double-weighting sales to encourage more employment in their jurisdictions. Today, the differing state-approved weights result in over or under apportionment of income across states. The U.S. consolidated corporate income tax thus provides considerable flexibility to the states to pursue their own policies but is less harmonized than in Canada.

Both Canada and the United States thus have sovereign central and regional governments with specific responsibilities and powers with policies legitimized by an electoral process. In contrast, the EU has no central government with sovereign taxing powers. Instead, it relies on the EU Treaty provisions to enforce the free flow of capital and labour across boundaries and to provide for the freedom of establishment.

III.2 A Global Unitary Tax

One factor behind the recent interest in developing a global unitary tax has likely been frustration with the difficulty of curbing multinational tax avoidance (and of course evasion). Concerns over multinational tax avoidance led the G20 countries to request the OECD to study and recommend provisions to curb base erosion and profit shifting. To date, the result has been some country actions such as adopting country-by-country reporting and such as limits on interest deductions in Europe and the United States. In part because many governments still wish to encourage investment with favourable tax policies, however, these tentative steps leave considerable scope for multinational companies to structure affairs to reduce taxes.

Several recent proposals have been made in Europe to introduce a tax on digital revenues in order to tax technology companies more effectively, with France advocating an EU-wide solution. The German Finance Minister, Olaf Scholz, has instead proposed to the OECD a corporate minimum tax. Some EU countries (Spain, UK) favour national-based taxes; others (Ireland, Sweden) seem skeptical of any action at all. Even if some agreement is made in December 2018 to introduce a digital tax, however, this is still only a narrow approach to corporate tax harmonization.

A different solution to reduce the scope of tax avoidance on a comprehensive basis is to adopt a global unitary corporate income tax potentially administered by a World Tax Organization (Tanzi 1995 and Sawyer 2009). Like the World Trade Organization, the World

Tax Organization could develop a set of rules to establish a common corporate tax and a method of allocating revenues to individual states. But such things are much easier to say than to do. Even a World Tax Organization would almost certainly have no sovereignty: any power it might have would be granted by consenting countries and could as easily be taken away. Decisions based on unanimity of member states would be difficult, as illustrated by the EU's efforts to develop a common consolidated corporate income tax base. Who determines policies? How would policies be reformed in later years? How would revenues be disbursed? How would the system be enforced? Given the importance of taxation for funding public services in each country, sovereign states are little inclined to hand taxing powers to an unelected body such as the World Tax Organization. In contrast, the World Trade Organization does not collect revenues but instead creates agreements among signing members to reduce barriers to trade. Much less is at stake.

Alternatively, countries could agree to a common corporate income tax base either globally or on a selective basis that would be allocated to a jurisdiction that could than apply its own tax rate to its allocated base.[36] No World Trade Organization would be required but institutionally, an agreement would be required in developing rules for the tax base and apportionment of the base. The selective approach being attempted in the European Union is in effect a regional approach to such a global unitary tax.

With two decades of failed attempts to harmonize the EU corporate tax systems among member countries – at least so far – it would be surprising if 200 countries or so could agree to a common corporate tax base with an apportionment rule to divvy up the profits among them. It is true that greater use of profit-split methods to determine transfer prices is increasingly used at the international level, which is akin to a formulary system. However, profit-splits are only used on a transaction-by-transaction basis as one of several approaches to measure arm's length prices under a separate accounting system and offer a very limited approach to a global unitary corporate tax that moves away from national separate accounting systems.

IV. **Lessons Learned**

The experience with determination of royalty policy under UNCLOS, a limited but practical case, and European corporate tax harmonization efforts illustrate some of the issues that would need to be dealt with by countries attempting to forge a global unitary corporate tax. Article 82 under UNCLOS is an example of creating a global centralized tax while the EU corporate tax harmonization has evolved into a consolidated corporate income tax with a formula apportionment with certain amount of flexibility provided to member states.

Table 1 below summarizes the key decisions that are needed to develop world cooperation for a global corporate income tax. These include: who set the tax policy (rates and bases)? Who pays? Who administers and collects the tax? Who gets the revenues? Who reforms the policies when necessary?

[36] In a paper by International Monetary Fund (2014), a formula apportionment system at the global level was viewed as difficult to implement although for selected countries might be possible.

Table 1 Attributes of UNCLOS and EU Consolidated Corporate Tax

	Article 82 UNCLOS	**EU Consolidated Corporate Tax**
Who sets tax rates?	UN Convention among member countries	Member country with weights used to apportion income
Who sets tax bases?	UN Convention signed by member countries (although specifics are up to collecting country)	EU Commission directives requiring unanimity
Who Pays?	Country signing convention is liable (though companies, central or sub-national governments could pay)	Multinational Companies
Who administers?	Country administers tax; UN (ISA) distributes revenues	Member country
Who gets revenues?	Unclear – landlock and poorer countries to benefit more	Member country
Who reforms policies?	In theory, only through Amendment to Convention (i.e. opening it all up again?) In practice, collection up to coastal state; disbursement up to UN (ISA).	EU Commission upon unanimity of governments

As reviewed in earlier sections, governments have signed onto Article 82 of the United National Convention under the Law of Sea that provides a specific rate applied to project revenues. The tax base definition is apparently entirely up to the coastal state as is the way in which it collects the levy. This may seem simple because countries (like Canada) already have royalty systems, but it is not. The base is subject to various judgments such as determining the wellhead price of oil and gas, which requires rules to determine transportation and distribution costs incurred to bring the product to the market.[37] The country responsible for paying the amounts owing to the United Nations could reduce the liability by providing a large adjustment for costs. This could easily give rise to disputes, if countries expecting UN payments (not yet determined) object to how a state determines its tax base. Although new legislation might be required to fix such disputes, amending Article 82 would likely be so difficult – in effect requiring reopening all of UNCLOS – that reform would likely not be possible.

Article 82 makes it clear that the country signing the convention is responsible for payment. However, it is up to the country, if it wishes, to pass the cost on to companies the cost, and to decide whether this expense may be credited or not against royalties (or other levies) that must be paid to the government. Allowing crediting would reduce revenues paid to the government in favour of the UN and raise the question of political acceptability discussed earlier.

[37] Most royalty systems are "ring-fenced" requiring governments to assess revenues at the wellhead (oil and gas) or pit's mouth (mining), which are market prices adjusted for unit costs of transportation and other distribution costs (such as pumping stations). An allowance might be provided for overhead costs such as interest expense and general administrative costs. For further discussion, see Chen and Mintz (2012) and Mintz (2016). In Canada, for example, considerable litigation has developed with regard to disputes in determining royalty bases with respect to offshore oil and gas developments under the Newfoundland & Labrador and Nova Scotia provisions.

If not credited, since royalty rates may be as high as 7 percent under Article 82, there would be a substantial tax impact on offshore projects, with the result almost certainly being reduced investment beyond the 200 nautical mile border – and hence a smaller revenue pie to be divided among recipient countries.

All this would be even more complicated in federal countries, like Argentina, Australia, Bolivia, Canada, China, Indonesia, Mexico, Papua New Guinea, the Philippines, the UAE and the United States in which subnational governments have the right to assess royalties or taxes on offshore resource projects (Bauer 2013). As Canadian experience already shows, disputes are between central and sub-national governments are likely to arise with regard to liability for the UNCLOS payment.

Of course, as we discussed earlier, UNCLOS obviously leaves many important administrative and policy decisions still to be decided and no one has yet had to make any hard decisions on this because the first potential projects are not yet producing so no revenues have yet been raised. Even if Article 82 revenues were much larger than seems likely, they would pale against the potential revenues that could be raised under a global unitary corporate income tax. Globally, corporate taxes are roughly US$2.5 trillion[38] so much would be at stake in sharing the tax. UNCLOS demonstrates how difficult it will be to share such a large source of tax revenues without answering the typical questions involved with assessing tax policies.

The efforts by the European Union to consolidate the corporate tax base of member states with formula apportionment also demonstrates that even a road paved with good intentions can be difficult to travel given all the potholes. As Table 1 shows, unlike UNCLOS, the EU approach provides considerable clarity with respect to who determines, pays, administers, collects and reforms the tax base and also provides some flexibility to member states in choosing rates. However, limiting base adjustments to unanimity among members both makes the system difficult to reform. and much less flexible than the formula apportionment systems adopted in Canada and United States, where provinces and states have much more freedom to determine the tax base or tax credits for economic purposes.

Administration under the EU corporate tax would likely be an evolving issue. Under past proposals, member countries would be responsible to administer the corporate tax allocated to them since there is no central body to administer the system at the EU level. Companies would prefer one audit to be carried out for its operations with the audit delegated to the country where the parent resides. Countries need to trust the audit abilities of other countries. Although presumably trust in the 'good faith' of other member states may be easier to find in the EU than in the UN, this could give rise to disputes if a country feels that an insufficient tax base is apportioned to them.[39] A centralized approach at the Commission level would overcome some of these issues but still could result in disputes among member countries. The line between administrative decisions and polices is often grey, with administrative practices sometimes creating policy when legislative rules are unclear.

With a global unitary corporate tax, governments would need to agree to a consolidated corporate tax base. They are unlikely to agree to strict rules restricting countries from varying

[38] Current world GDP is US$90 trillion and average corporate tax as a share of GDP in OECD countries is 2.7% in 2016, which is assumed to roughly apply to other countries. Values derived from the OCED Database.

[39] Although presumably trust in the 'good faith' of other member states may be easier to find in the EU than in the UN.

the base or choosing tax credits for policy reasons, adopting more the American or Canadian approaches to unitary taxation. Countries would also need to agree on a formula – like the one not yet established with respect to Article 82 royalties - to distribute a multinational's tax base among member countries. They would also need to agree to rules establishing a nexus between the company activities and a country (including rules to determine permanent establishments) as practices currently vary across countries.

As for administration of a global tax, it is unlikely that advanced countries will wish to leave auditing to many small-developed economies. A centralized approach would be preferable, but each country might perhaps wish to audit its own multinationals. If every country were able to audit a multinational under formula apportionment, companies would of course find the process quite burdensome. The EU is in better position to resolve these issues since each country has competent authorities, but administration of a global corporate tax would be a much more difficult matter. Still, as experience has shown, even an EU-style global corporate tax harmonization is a daunting task. Sovereign governments are reluctant to give up taxing authority and revenues and unlikely to accept that a global unitary tax will better for them than operating their own corporate tax.

V. Conclusions

This paper focuses on obstacles in achieving a global unitary corporate tax, including the EU approach to a consolidated corporate tax base with formula apportionment. We illustrate the difficulty of creating a global tax by an analysis of the United Nations agreement with respect to offshore resource developments beyond the 200 nautical-mile limits under the United Nations Convention on the Law of the Sea (UNCLOS). We then review the almost three-decade debate to develop a European corporate tax that has so far not been resolved. Most economic studies of such issues have understandably focused on the impact on allocative efficiency (the effect on the size of the tax base, regardless of who taxes it) or, to a lesser extent, on the impact of international avoidance on fiscal distribution within countries. Less attention has been paid to the more fundamental question that often shape international fiscal relations: who gets how much? Who makes the decision to set rates and bases? How are revenues shared amongst the nations? In most countries, the politically critical issue in international tax matters is not how efficiently international income is taxed (the size of the pie) but how countries can ensure that they get what they consider to be their 'fair share' of the pie.

References

Antle, Rob (2013) "Ottawa, N.L. unsure who will pay UN tax on new oil finds," https://www.cbc.ca/news/canada/newfoundland-labrador/ottawa-n-l-unsure-who-will-pay-UN-tax-on-new-oil-funds-1.225138 (Oct. 28, 2013)

Antle, Rob (2018) "UN could cash in on N.L. oil project – but questions linger over who would pay" https://www.cbc.ca/news/politicas/ottaw-bay-du-nord-unclos-dwight-dwight-ball-payments-1.4763436 (July 27, 2018).

Bauer, Andrew (2013), "Subnational Oil, Gas and Mineral Revenue Management," *Briefing Paper*, Natural Resource Governance Institute, New York, United States, https://resourcegovernance.org/sites/default/files/Sub_Oil_Gas_Mgmt_20151125.pdf.

Bird, Richard (2018) "Are Global Taxes Feasible?" *International Tax and Public Finance*, 25 (5, October 2018): 1372-1400.

Bird, Richard (2018a) "Equalization and Canada's Fiscal Constitution: The Tie that Binds?" *Canadian Tax Journal,* 66 (4): forthcoming.

Bird, Richard, and Jack Mintz (2003) "Sharing the International Tax Base in a Changing World," in Sijbren Cnossen and Hans-Werner Sinn, eds, *Public Finance and Public Policy in the New Century* (Cambridge, MA: MIT Press, 2003), pp. 405-46.

Boadway, Robin (2015) "Tax Policy for a Rent-Rich Economy," *Canadian Public Policy*, 41 (4): 253-264.

Bonner, Patrick (2013) "Neo-Isolationists Scuttle UNCLOS," *SAIS Review of International Affairs*, 33 (2): 135-146.

Calder, Jack (2014) *Administering Fiscal Regimes for Extractive Industries – A Handbook* (Washington: International Monetary Fund).

Chen, Duanjie and Jack Mintz (2012), "Capturing Economic Rents from Resources Through Royalties and Taxation," with Duanjie Chen, *SPP Research Papers*, 5(30), October.

Chircop, Aldo (2013) "Development of Guidelines for the Implementation of Article 82," Annex 4 in ISA (2013).

Chircop, Aldo and Bruce Marchand (2003) "International Royalty and Continental Shelf Limits: Emerging Issues for the Canadian Offshore," *Dalhousie Law Journal,* 26: 273-302.

Commission on the Limits of the Continental Shelf (CLCS) (2018) Forty-sixth session, New York, 29 January-16 March 2018 (United Nations document 18-05451 E).

Crisan, Daria and Jack Mintz (2016), "Alberta's New Royalty Regime is a Step Towards Competitiveness: A 2016 Update," *SPP Research Papers*, 9(35), October.

Crisan, D. and J. Mintz (2017), "A 2017 Update of Taxation of Oil Investments: How U.S. Tax Reform Could Affect Competitiveness," *SPP Research Papers*, 10(21), School of Public Policy, University of Calgary, September.

Dagan, Tsilly (2018) *International Tax Policy: Between Competition and Cooperation* (Cambridge University Press).

Doyle, Alister (2014) "Statoil Runs into UNCLOS Liability as Canada Extends Seabed Territories, Reuters
https://gcaptain.com/statoil-runs-unclos-liability-canada-extends-seabed- territories

Durst, Michael (2018) "Poverty, Tax Competition, and Base Erosion," *Tax Notes International* 89 (12): 1189-1201.

European Commission (1992), *Report of the Committee of Independent Experts on Company Income Taxation* (the Ruding Report), Office of the Official Publications of the European Communities, Luxembourg.

European Commission (2002), *Company Taxation in the Internal Market,* Commission staff working paper, Office of Official Publications fo the European Communities, Luxembourg.

Franckx, Erik (2010) "The International Seabed Authority and the Common Heritage of Mankind: The Need for States to Establish the Outer Limits of their Continental Shelf," *International Journal of Marine and Coastal Law*, 25: 543-567.

Gault, Ian Townsend (1985) "Jurisdiction over the Petroleum Resources of the Canadian Continental Shelf: The Emerging Picture," *Alberta Law Review*, 23(1):75-100.

Harrison, Rowland (2017) "Article 82 of UNCLOS: The Day of Reckoning Approaches," *Journal of World Energy Law and Business,* 10: 488-504.

Herzfeld, Mindy (2017) "The Case Against BEPS: Lessons for Tax Coordination," *Florida Tax Review,* 21 (1): 1-59.

International Monetary Fund (IMF) (2014), "Spillovers in International Corporate Taxation," *IMF Policy Paper*, Washington D.C. https://www.imf.org/external/np/pp/eng/2014/050914.pdf.

International Seabed Authority (!SA) (2009) *Issues Associated with the Implementation of Article 82 of the United Nations Convention on the Law of the Sea*, ISA Technical Study No. 4.

International Seabed Authority (2013) *Implementation of Article 82 of the United Nations Convention on the Law of the Sea*, ISA Technical Study No. 12.

International Seabed Authority (2016) *A Study of key Terms in Article 82 of the United Nations Convention on the Law of the Sea*, ISA Technical Study No. 15.

Kanekara, Atsuko (2008) The Revenue Sharing Scheme with Respect to the Exploitation of the Outer Continental Shelf under Article 82 of the United Nations Convention on the Law of the Sea – A Plethora of Entangling Issues, Presentation to Seminar on the Establishment of Outer Limits of the Continental Shelf beyond 200 Nautical Miles under UNCLOS – Its Implications for International Law, Tokyo, February.

Lodge, Michael (2006) "The International Seabed Authority and Article 82 of the UN Convention on the Law of the Sea," International Journal of Marine and Coastal Law, 21 (3): 323-333.

Lodge, Michael (2017) Remarks to Partnership Dialogue 7: Enhancing the Conservation and Sustainable Use of Oceans and their Resources by Implementing International Law as Reflected in the United Nations Convention on the Law of the Sea.

Longtain, Shay (2015) "The U.S. Continental Shelf Beyond 200 Nautical Miles," Thesis, The Arctic University of Norway.

Machiavelli, Niccolo (1513/1950) The Prince and The Discourses, ed. Max Lerner (New York: Random House).

McDorman, Ted (2002) "The role of the Commission on the Limits of the Continental Shelf: a Technical Body in a Political World," *International Journal of Marine and Coastal Law*, 17 (3): 301-324.

McDorman, Ted (2010) "Enhancing the Implementation of UNCLOS at the Natonal Level," Remarks at Roundtable Session on the United Nations Convention on the Law of the Sea.

Mingay, George (2006) "Article 82 of the LOS Convention—Revenue Sharing—The Mining Industry's Perspective," *International Journal of Marine and Coastal Law*, 21 (3): 335-346.

Mintz, Jack (1999), "Globalization of the Corporate Income Tax: The Role of Allocation", *FinanzArchiv*, 1999, pp. 56, 389-422.

Mintz, Jack (2004) "Corporate Tax Harmonization in Europe: It's All About Compliance", *International Tax and Public Finance,* Vol. 22, No. 2, 221-234.

Mintz, Jack (2016), "Taxes, Royalties and Cross-Border Investments," in *International Taxation and the Extractive Industries*, ed. P. Daniel et al. Washington D. C.: International Monetary Fund, Routledge, New York and London.

Mintz, Jack (2018) "Directions for Corporate Tax Reform," *Corporate Tax Reform,* ed. by B. Dahlby, Canadian Tax Foundation, Toronto, 2018.

Mintz, Jack (2018a), "Two Conflicts in a Federation: An Application to Canada", CESifo Working Paper, 7282, Munich, Germany.

Mintz, Jack and Joann M. Weiner (2002), "An Exploration of Formula Apportionment in the European Union", *European Taxation,* Special Issue, Vol. 42, No. 8, 346-351.

Nemeth, Steven et al. (2014) "Ruling the Sea; Managing Maritime Conflicts through UNCLOS and Exclusive Economic Zones," *International Interactions*, 40: 711-735.

Picciotti, Sol, (2012) *Towards Unitary Taxation of Transnational Corporations,* Tax Justice Network. https://www.taxjustice.net/cms/upload/pdf/Towards_Unitary_Taxation_1-1.pdf.

Pogge, Thomas and Krishen Mehta, eds. (2016) *Global Tax Fairness* (Oxford University Press).

Prows, Peter, "Tough Love: The Dramatic Birth and Looming Demise of UNCLOS Property Law (and What is to Be Done about it)," *Texas International Law Journal*, 42: 241-309.

Rodgers Oil and Gas Consulting (2015) *United Nations "Royalty": Potential Impacts on Future Deep Water Investments from Article 82 of The United Nations Convention on the Law of the Sea*, February.

Sandalow, David (2004) "Law of the Sea Convention: Should the U.S. Join?", Brookings Institution Policy Brief #137.

Sawyer, Adrian, *Developing a World Tax Organization: The Way Forward,* Fiscal Publications, United Kingdom, 2009.

"Seabed Mining: The Next Big Business-29 Exploratory Licences Issued by ISA Up To 2018," *The Gleaner* (Kingston, Jamaica), September 25.

Siu, Erika Dayle, Sol Picciotti, Jack Mintz and Akilagpa Sawyerr (2015) Unitary Taxation in the Extractive Resource Sector, Working Paper 35, Centre for International Centre for Tax and Development, Brighton, United Kingdom.

Spicer, Wylie (2015) *Canada, the Law of the Sea Treaty and International Payments: Where Will the Money Come From?* University of Calgary, School of Public Policy, SPP Research Papers, 8 (31), September.

Steinmo, Sven, ed. (2018) *The Leap of Faith: The Fiscal Foundations of Successful Government in Europe and America* (Oxford University Press).

Subedi, Surya (2011) "Problems and Prospects for the Commission on the Limits of the Continental Shelf in Dealing with Submissions by Coastal States in Relation to the Ocean Territory Beyond 200 Nautical Miles," *International Journal of Marine and Coastal Law*, 26: 413-432.

Tanzi, Vito (1995), *Taxation in an Integrating World,* Brookings Institution, Washington D.C.

Taylor, Prue (2011) The Common Heritage of Mankind: A Bold Doctrine Kept Within Strict Boundaries (http://wealthofthecommons.org/essay/common-heritage-mankind-bold-doctrine-kept-within-strict-boundaries.

Tombe, Trevor (2015), "Better off Dead: Value-Added in Economic Debates," *SPP Research Papers*, 8(9), School of Public Policy, University of Calgary.

Thrasher, Jack and Simon Baines (2014) "Developments in Newfoundland and Labrador Offshore Royalties from Hibernia to Hebron and Back," *Dalhousie Law Journal*, 37 (1): 33-86.

Tuerk, Helmut (2017) "The Common Heritage of Mankind after 50 Years," *Indian Journal of International Law*, *57* (3-4): 259-283.

Weiner Joann M. (2006), *Company Tax Reform in the European Union: Guidance From the United States and Canada on Implementing Formulary Apportionment in the EU*, New York: Springer Science + Business Media.

World Bank Group (2009) The Petroleum Value Chain, June.