CARBON PRICING AND TAXATION: AN EXAMINATION OF THE TAXATION OF EMISSIONS TRADING TRANSACTIONS FROM A DOMESTIC AND INTERNATIONAL PERSPECTIVE

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ABSTRACT

The economic arguments in support of the use of emissions trading schemes as a mechanism to reduce harmful greenhouse gas emissions rely on the ability of the schemes to internalise the cost of the pollution externality through a price signal – the cost of an emission permit. Taxation has the potential to distort this price signal if emissions trading transactions are not subject to the same tax treatment across entities but, to date, the issue of the application of taxation regimes to such transactions has received little academic consideration. The prospect of inconsistent tax treatment is heightened where emissions trading systems are linked internationally, allowing permits to flow between jurisdictions. This thesis systematically examines the direct (income) taxation of carbon trading transactions in order to determine instances in practice where inconsistent tax outcomes may arise and makes recommendations for tax law design.

The thesis builds up a picture of emissions trading taxation through three layers. The first is the treatment of relevant transactions for financial accounting purposes. This is necessary given that many jurisdictions take accounting profits as the starting point in determining tax liability. The second element is domestic taxation and involves a detailed, comparative analysis of the domestic tax treatment of emissions trading transactions in Australia and the United Kingdom. These jurisdictions are amenable to comparison given that the United Kingdom is representative of jurisdictions that apply ordinary tax rules to these transactions, whereas Australia has adopted specifically designed tax rules to address the unusual features of the transactions. The third element is international taxation, where this necessarily involves the application of both international tax rules found in domestic law and tax treaties. These rules are applied to six hypothetical trading transactions which could arise under linked trading schemes in order to systematically test the outcomes against the goal of inter-firm neutrality. For these purposes, the representative tax systems

are again based on the Australia and United Kingdom models and the tax treaty network is assumed to be based on the Organisation for Economic Co-operation and Development (OECD) *Model Tax Convention on Income and on Capital*.

STATEMENT OF ORIGINAL AUTHORSHIP

The work embodied in this thesis has not been submitted for a higher degree to any other university or institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Celeste Marie Black

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CHAPTER ONE:

EMISSIONS TRADING SCHEMES AND THE PROBLEM OF TAXATION

At one level, the policy problem is a simple one:
to internalize the external cost of greenhouse gas emissions. . . .
On closer examination, this is a problem of multifarious complexity.
The first complication is that the externality is global.[1]

1. Background and Context of the Research

In his seminal text *The Economics of Climate Change*, Stern sets the issue of climate change within an economics framework as 'an example of market failure involving externalities and public goods.'[2] An externality will be present when the private cost and public cost of an action or activity are not aligned or equal.[3] In the case of climate change, the (negative) externality stems from the fact that producers of greenhouse gas emissions impose a cost on the world, both in the short and long term, but do not face the cost of that impact.[4] The public good in question is the climate in that an individual's consumption of the good does not reduce any other individual's consumption and one who fails to pay for such consumption cannot be excluded from it.[5] Stern evaluates in detail three policy tools to address this negative externality: direct government regulation (command and control) and

[1] Ross Garnaut, 'The carbon tax: early experience and future prospects' in John Quiggin, David Adamson and Daniel Quiggin (eds), *Carbon Pricing: Early Experience and Future Prospects* (Edward Elgar, 2014) 11.
[2] Nicholas Stern, Cabinet Office – HM Treasury, *The Economics of Climate Change: The Stern Review* (Cambridge University Press, 2007) 27.
[3] Carl J Dahlman, 'The Problem of Externality' (1979) 22(1) *Journal of Law and Economics* 141, 141.
[4] Stern, above n 2, 27.
[5] Ibid. The classic definition of public goods, referred to also as collective consumption goods, was developed by Samuelson: see Paul A Samuelson, 'The Pure Theory of Public Expenditure' (1954) 36(4) *Review of Economics and Statistics* 387, 387.

two ways to use markets to, in effect, internalise the externality—carbon taxes and emissions trading schemes (ETSs).[6]

Based on the economic theory of externalities, one option developed by Pigou is for government to intervene and impose a cost on the producers of the externality through a tax scheme.[7] Such taxes are often referred to as Pigovian taxes, and a carbon tax or carbon price functions in this manner. Alternatively, based on the theory developed by Coase,[8] the externality issue can be resolved through the development and operation of a market that incorporates re-arranged legal/property rights (such as, in the current context, the right to emit greenhouse gases) to achieve an economically efficient outcome. Carbon markets (emissions trading) based on the Coase theorem are designed to produce reductions in emissions at the lowest cost. The market participants will compare their marginal cost of abating emissions to the permit price and determine whether it is more cost effective to undertake the abatement activity or to purchase the permits, such that the resulting trading activity will produce a market price of a permit equal to the marginal cost of abatement across the covered economic activities.[9] Stern emphasises that the ultimate goal is the establishment of a price signal, common across sectors and countries, that reflects the marginal damage caused by carbon emissions—a common or global price signal.[10]

At an international level, the potential role of markets to deal with the challenges of climate change has long been acknowledged. An early success in the use of emissions trading was the United States Acid Rain Program, established in 1995.[11] Under the Kyoto Protocol to

[6] Stern, above n 2, 353.
[7] Arthur C Pigou, *The Economics of Welfare* (Macmillan, 1920).
[8] Ronald H Coase, 'The problem of social cost' (1960) 3 *Journal of Law and Economics* 1.
[9] Stern, above n 2, 359.
[10] Ibid 351.
[11] Ibid 371. The Acid Rain Program was created by Title IV to the *Clean Air Act Amendments*: see 42 USC ch 85 §§ 7651-76510.

the United Nations Framework Convention on Climate Change[12] (UNFCCC), the use of emissions trading is nominated as one mechanism through which Parties may meet their commitments to reduce harmful emissions. The European Union was quick to take up this policy option and launched the European Union Emissions Trading Scheme (EU ETS) in 2005.[13]

In light of the goal of establishing a common (global) price signal, Flachsland, Marschinski and Edenhofer have analysed the environmental effectiveness and cost-effectiveness of various avenues to establish international emissions trading.[14] A 'top-down' UNFCCC-driven global trading system is seen to have many advantages, but there are doubts regarding political feasibility.[15] Flachsland et al were writing in 2009 and such doubts are only stronger now, given the failure of the international community to reach a binding agreement after the expiry of the first commitment period under the Kyoto Protocol.[16] One alternative 'bottom-up' strategy involves a fragmented market (independent ETSs), but where

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The goal of the program was to reduce the emissions of sulfur dioxide from fossil fuel fired power generators by way of an allowance trading system. See US Environmental Protection Agency, *Acid Rain Program SO2 Allowance Fact Sheet* (2014) <http://www.epa.gov/airmarkets/trading/factsheet.html>. According to the EPA, SO2 emissions have dropped by 60 percent as a result of this program: US Environmental Protection Agency, *SO2 Emission Reductions from Acid Rain Program Sources and Improvements in Air Quality* (2010) <http://www.epa.gov/captrade/maps/so2.html>.

[12] *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, opened for signature 11 December 1997, [2008] ATS 2 (entered into force generally 16 February 2005, entered into force in Australia 11 March 2008).

[13] The EU scheme is now officially called the 'Emissions Trading System', but the acronym remains unchanged.

[14] Christian Flachsland, Robert Marschinski and Ottmar Edenhofer, 'Global trading versus linking: Architectures for international emissions trading' (2009) 37 *Energy Policy* 1637.

[15] Ibid 1639-41.

[16] The Kyoto first commitment period expired in 2012. An amendment to the Kyoto Protocol to establish a second commitment period (to expire 2020) was adopted in Doha in December 2012 but requires acceptance by three-fourths of the Parties (144 instruments of acceptance in total) before it enters into force. As at 10 December 2015 (the most recent update available), only 58 countries have ratified the Doha Amendment. See UNFCCC, *Status of the Doha Amendment* (10 December 2015) <http://unfccc.int/kyoto_protocol/doha_amendment/items/7362.php>. Negotiations to draft a post-2020 international agreement were the focus of the Conference of the Parties (COP) in Lima (COP 20) in late 2014 with the ultimate goal of reaching such an agreement at COP 21 in Paris in late 2015. See recently, UN Climate Change Secretariat, 'Negotiations towards a new climate agreement resume in Bonn' (Press Release, 16 October 2014).

the bilateral or multilateral linking of national or regional schemes can establish a common price, as well as provide nations with greater access to lower cost abatement options.[17]

In recent years, there has been growth in unilateral actions to establish ETSs as well as growing interest in establishing linkages between schemes – evidence of the bottom-up strategy in action. A recent report by the World Bank shows that carbon pricing instruments at a national and subnational level have been steadily increasing across the world since 2012 and, with the notable launch of seven pilot schemes in China, there has been a three-fold increase in the volume of emissions covered by carbon pricing in this period.[18] The recent announcement of the commencement of a national carbon market in China in 2017 will see a dramatic increase to this global coverage.[19] With respect to multi-jurisdictional schemes, the first and still the largest international carbon trading market is the EU ETS, but more recently a linkage was established in 2014 between the ETSs of California and Quebec[20] and the province of Ontario has recently announced that it intends to join this scheme.[21] Significant work was undertaken to develop the now abandoned link between the EU ETS and Australia's now repealed Carbon Pricing Mechanism[22] (a cap-and-trade scheme), and the EU ETS is working on building bilateral cooperation with the nascent China ETS.[23]

Issues raised by linking have attracted some academic attention but are generally focused on the compatibility of scheme design.[24] One issue that has been given very little consideration to date is the interaction of the tax systems of the jurisdictions participating in

[17] Flachsland et al, above n 14, 1641-43.
[18] World Bank, *State and Trends in Carbon Pricing 2015* (2015) 20.
[19] The White House, Office of the Press Secretary, 'U.S.-China Joint Presidential Statement on Climate Change' (Press Release, 25 September 2015).
[20] California Air Resources Board and Government of Quebec, *Agreement between the California Air Resources Board and the Gouvernement du Quebec concerning the Harmonization and Integration of Cap-and-Trade Programs for Reducing Greenhouse Gas Emissions* (Government of Quebec, 27 September 2013).
[21] Premier of Ontario Kathleen Wynne, 'Cap and Trade System to Limit Greenhouse Gas Pollution in Ontario' (News Release, 13 April 2015).
[22] *Clean Energy Legislation (Carbon Tax Repeal) Act 2014* (Cth).
[23] European Council, 'EU-China Joint Statement on Climate Change' (Press Releases and Statements, 539/15, 29 June 2015).
[24] See, eg, Stefan E Weishaar, *Emissions Trading Design: A Critical Overview* (Edward Elgar, 2014) ch 2.

such a linked scheme. At a fundamental level, the argument in support of a multi-jurisdictional or linked ETS is that the cost-efficiency of the broader scheme will be improved since there is a larger pool of abatement options.[25] The common price signal determines which of these options for abatement will be undertaken (at the firm level, the abatement opportunity will be taken up when its cost is less than the given permit price). However, the costs to the firm are not simply the price of a permit and the cost of the abatement option but rather the after-tax costs. Therefore, tax may have the effect of distorting abatement decisions if the relevant permit transactions are not subject to consistent tax treatment across the relevant jurisdictions. This is the focus of this thesis.

2. The Significance of the Tax Problem and Literature Review

Inconsistencies or differences in the taxation treatment of emissions trading transactions may arise due to the fact that ETS transactions have an unusual dual character—the ETS (compliance) liability is effectively an additional cost of business (an expense) but this cost is embodied in tradable assets (permits)—and the tax laws may not effectively address these two features or may do so in different ways. Anomalies in tax treatment of emissions trading transactions across jurisdictions are significant for two main reasons. First, as identified above, from an environmental policy perspective, it has been recognised that differences in taxation have the potential to distort the price signal for emissions and reduce the cost-effectiveness of the ETS, where the ultimate goal is the reduction of greenhouse gas emissions in the most economically efficient manner. Second, from a tax policy perspective, differences in the taxation treatment of cross-border holdings of permits could lead to undesirable results, specifically double taxation (that is, where the same income or profits are subject to tax in two jurisdictions without relief) or double non-taxation (that is, where

[25] World Bank, above n 18, 93.

income or profits are not taxed in any jurisdiction). Such outcomes have the potential to distort the efficient allocation of resources to income producing activities across jurisdictions.

In October 2010, Copenhagen Economics released a report into the tax treatment of EU ETS transactions.[26] The report identified potential distortions due to differences in EU Member State domestic tax treatment and potential problems linked to cross-border trading, and the report went on to make policy recommendations in light of these findings. Chapter 3 of the report is particularly useful for its description of major issues arising in relation to ETS transactions and the evaluation of difference solutions to address these issues.[27] Based on the differences in tax treatment identified in the EU,[28] the authors of the report undertook a modeling exercise to estimate the significance of any distortions and concluded that they were, at most, modest.[29] The analysis of potential cross-border tax issues was also undertaken with a view to determining if there was the potential for double taxation or tax arbitrage. Although a number of problems were identified across both the domestic and international tax regimes, the conclusion was that there was 'little evidence that the current construct of EU national taxes and bilateral OECD based bilateral tax treaties will lead to significant malfunctioning of the ETS system.'[30] However, the data examined in the Copenhagen Economics report was limited to EU Member States and the tax rules were presented only in a summary form, based on the results of a survey.[31] This thesis extends that tax analysis

[26] Sigurd Næss-Schmidt, Ulrik Møller, Eske S Hansen and Jonatan Tops, *Tax treatment of ETS allowances: Options for improving transparency and efficiency* (Copenhagen Economics, 2010).
[27] Ibid 23. The Copenhagen Economics report identifies five issues that need to be addressed when designing a tax regime for ETS permits: how to recognise permits for domestic tax law purposes; whether to use inventory or a realisation basis of taxation; how to treat free permits; the treatment of allowances issued under the Clean Development Mechanism or Joint Implementation projects; and the treatment of penalties for non-compliance. This thesis formulates three focal issues that broadly pick up on the same problems as the first three issues identified in the Report.
[28] Ibid 35.
[29] Ibid ch 4.
[30] Ibid 62.
[31] Ibid 9. The data on tax treatment was expressed in table form and the source identified was a new survey commissioned for the study and undertaken by Deloitte. See Table 1.1, 9. This summary is acknowledged to be 'based on best estimates of current assumed practice' based on the survey and it is also noted that some countries seem to allow for different treatment of allowances—when this was the case, the authors selected the

beyond the EU to include Australia and provides a more detailed and comprehensive evaluation of the various technical tax issues. It also examines in greater detail the application of tax treaties, especially in relation to the application of Article 7 (Business Profits) of the OECD *Model Tax Convention on Income and on Capital* (OECD Model).[32]

Kane has developed a useful framework for evaluating tax issues that arise from differential taxation of ETS permit transactions across jurisdictions and across time.[33] As stated by Kane, 'the goal of a well-designed tax policy would be for taxes not to alter the pre-tax equilibrium condition of equality between marginal benefits and marginal cost.'[34] Kane further describes this goal in terms of cost-effectiveness or, as he terms it, abatement efficiency, and then elaborates that this requires that the tax system does not influence a firm to undertake abatement decisions that were not efficient in the pre-tax world.[35] Kane shows that there are two alternative routes to achieve abatement cost-efficiency: inter-firm neutrality (where permits are taxed in the same manner across firms and abatement costs are also treated in the same manner across firms) and intra-firm neutrality (where each firm faces the same tax treatment for permits and abatement costs).[36] This thesis applies one aspect of this approach—it evaluates the current tax treatment of permits under specific taxation systems against the criteria of inter-firm neutrality with the goal of determining whether current tax rules have the potential to create distortions across firms with respect to the holding of permits. For inter-firm neutrality to hold, one condition is that 'permits must face the same

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treatment most favourable from a net present value perspective. The technical, statutory basis for the tax outcomes was not provided in the report.

[32] OECD, *Model Tax Convention on Income and on Capital* (2014).

[33] Mitchell A Kane, 'Taxation and Multi-Period Global Cap and Trade' (2011) 19 *NYU Environmental Law Journal* 87.

[34] Ibid 89.

[35] Ibid 90-1.

[36] Ibid 101-2. For a brief and general discussion of these options see Mitchell A Kane, 'Tax and Efficiency under Global Cap-and-Trade' in Richard B Stewart, Benedict Kingsbury and Bryce Rudyk (eds), *Climate Finance: Regulatory and Funding Strategies for Climate Change and Global Development* (New York University Press, 2009).

tax treatment (regardless of the firm which acquires, holds, or surrenders them).'[37] The analysis of the other condition of inter-firm neutrality, the tax treatment of abatement costs across firms, is outside the scope of this thesis. However, if neutrality in relation to emission permits is not found inter-firm, the issue of the taxation of abatement costs is moot as inter-firm neutrality cannot be achieved. The testing of current tax frameworks against the alternative goal of intra-firm neutrality is also beyond the scope of this thesis.

Aside from the work of Copenhagen Economics and Kane, there has been limited academic attention given to the taxation of carbon markets within jurisdictions and even less that takes the comparative approach adopted in this thesis. There has been a particular focus on the treatment of free permits, which has been a significant feature of both the US Acid Rain Program and the EU ETS. The US Internal Revenue Service has determined that, for US tax purposes, permits issued for free under the Acid Rain Program are not assessable income on receipt and are given a nil cost basis, thereby deferring the taxation of free permits until realisation.[38] Nash suggests that the differential treatment with regard to grandfathered (free) permits and purchased permits will not only reduce trading but will also distort decisions to reduce pollution.[39] Yale applies a law and economics approach to analyse the impact of the nil cost basis tax rule in creating the so-called 'lock-in' effect.[40] When the tax cost of an asset is fixed at its historical purchase price and gains are not taxed until realisation (sale), the taxpayer will be deterred from selling the asset ('locked in' to the investment) as the whole of the gain would be realised and taxed all at once. Yale shows that there is no cost-effectiveness impact on the choice between using or selling a permit due to taxation in a

[37] Kane, above n 33, 103.
[38] IRS, Rev Ruling 92-16, 'Issuance of Emission Permits', 1992-1 CB 15 (1992).
[39] Jonathan Remy Nash, 'Taxes and the success of non-tax market-based environmental regulatory regimes' in Natalie Chalifour, Janet Milne, Hope Ashiabor, Kurt Deketelaere and Larry Kreiser (eds), *Critical Issues in Environmental Taxation: International and Comparative Perspectives Vol V* (Oxford University Press, 2008) 735, 749.
[40] Ethan Yale, 'Taxing Cap-and-Trade Environmental Regulation' (2008) 37 *Journal of Legal Studies* 535.

single period model (based on certain assumptions) but that the nil basis rule may distort the market in a multi-period model.[41] Lucas argues convincingly that the nil cost base approach to taxing free permits adopted in relation to the Acid Rain Program should not be extended to free permits issued under a proposed US greenhouse gas cap-and-trade scheme.[42]

In his paper focusing on an application of tax policy principles to climate change, Margalioth also addresses the practical aspects of the application of the US Internal Revenue Code[43] to a cap-and-trade system.[44] Statements by the US Internal Revenue Service with respect to tax issues arising under the Acid Rain Program are described and Margalioth identifies the 'exacerbation of the lock-in effect' that arises when permits are issued for free as a particularly challenging issue for the tax system.[45] Margalioth recommends that free permits should be taxed on receipt and an inventory (trading stock) approach, including annual market valuations, should apply to emission permits.[46]

Taking an economic modeling approach, Fischer analyses the impact of emissions trading on decisions to undertake abatement activities and the consequent emission permit price, in cases involving both single jurisdiction and international markets and in a world with differing corporate tax rates.[47] Fischer's analysis shows how the efficiency of abatement decisions could be sacrificed where there is a differential in the permit price across markets or if there is flexibility in transfer pricing of permits within multinational entities, which can

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[41] Ibid 548.
[42] Gary M Lucas, 'The Taxation of Emissions Permits Distributed for Free as Part of a Carbon Cap-and-Trade Program' (2010) 1 *George Washington Journal of Energy & Environmental Law* 16.
[43] *Internal Revenue Code of 1986*, 26 USC (1986).
[44] Yoram Margalioth, 'Tax Policy Analysis of Climate Change' (2010-11) 64 *Tax Law Review* 63
[45] Ibid 94-5.
[46] Ibid 97. For an earlier, less detailed discussion of these issues, see Yoram Margalioth, 'Tax Consequences of Carbon Cap-and-Trade Schemes: Free Permits and Auctioned Permits' in Richard B Stewart, Benedict Kingsbury and Bryce Rudyk (eds), *Climate Finance: Regulatory and Funding Strategies for Climate Change and Global Development* (New York University Press, 2009).
[47] Carolyn Fischer, 'Multinational taxation and international emissions trading' (2006) 28 *Resource and Energy Economics* 139.

also lead to tax shifting.[48] Fischer's modelling appears to assume that the costs of abatement and permits are fully deductible within a single period and does not extend to the activity of permit trading for profit. However, this thesis shows that the tax treatment of costs in relation to permits as well as the realisation of gains and losses on permits can be subject to different tax timing rules.

More recently, Constantini et al have acknowledged the importance of considering tax issues in relation to emissions trading and have built on the work of Fischer, Yale and Kane to theoretically analyse how differences in the tax treatment of emission permits may affect an international trading scheme under a partial equilibrium model as well as undertake numerical simulations with a computable general equilibrium model.[49] This work specifically acknowledges the continued uncertainty regarding taxation and accountancy treatment of emission permits and does not attempt to mimic or provide a full legal analysis of this treatment.[50] The authors put forward the proposition that differences in tax treatment across countries will violate the cost effectiveness of the emissions trading market,[51] which is said to support the conclusions of Kane. Constanini et al see their work as a starting point in attempts to assess, through economic modelling, the impact of taxation on the market[52] and they find that, departing from the conclusions of the Copenhagen Economics study, the impact of taxation on the market is substantial.[53] This interest in a 'seemingly overlooked aspect in the functioning of an international emissions trading scheme'[54] is welcomed from scholars in the law and economics field but it still leaves a gap in the literature with regard to a detailed and

[48] Ibid 155.
[49] Valeria Constantini, Alession D'Amato, Chiara Martini, Maria Cristina Tommasino, Edilio Valentini and Mariangela Zoli, 'Taxing international emissions trading' (2013) 40 *Energy Economics* 609.
[50] Ibid 609.
[51] Ibid 611.
[52] Ibid 619.
[53] Ibid 610.
[54] Ibid 609.

technical analysis of the application of taxation law to these transactions, the focus here in this thesis.

Some comparative work has been undertaken in relation to the taxation of emissions trading in Australia and New Zealand. Prior to the commencement of this project, the author of this thesis engaged in comparative analysis of the taxation of carbon permits[55] as well as land use offsets[56] under the two systems and this earlier work was a valuable foundation for the current research. Dunne also provides a description of the various design features of the two trading schemes and includes a brief description of the basic tax rules but does not go on to further analyse the implications of these differences.[57]

The international tax issues analysed in this thesis are premised on a system of linked ETSs. There is a significant body of literature that addresses scheme linking. Flachsland, Marschinski and Edenhofer consider the mechanisms for scheme linkages and divide them into top-down and bottom-up approaches.[58] Flachsland et al have analysed the theoretical improvements to environmental effectiveness and cost effectiveness that linking can bring as well as the political feasibility of the various mechanisms. Jaffe, Ranson and Stavins identify three types of linking mechanisms (direct unilateral, direct bilateral and indirect) and discuss the benefits and concerns about linking generally as well as in relation to the specific types of linking.[59] Jaffe et al also discuss the potential roles of linking within an international climate policy architecture, including both near-term and longer-term roles. In the longer term, Jaffe et al see linking's potential roles as including a de facto bottom-up architecture, as a

[55] Celeste Black, 'Tax accounting for transactions under an emissions trading scheme: An Australasian perspective' (2011) 5(1) *Carbon & Climate Law Review* 91.
[56] Celeste Black and Alex Evans, 'A critical analysis of the tax treatment of dealings under Australian domestic emissions reduction and abatement frameworks' (2011) 26(2) *Australian Tax Forum* 287.
[57] Joanne Dunne, 'Emissions trading and tax: a trans-Tasman perspective' (2012) 47(3) *Taxation in Australia* 157.
[58] Flachsland et al, above n 14, 1638-9.
[59] Judson Jaffe, Matthew Ranson and Robert N Stavins, 'Linking tradable permit systems: A key element of emerging international climate policy architecture' (2009) 36 *Ecology Law Quarterly* 789.

foundation for the evolution of a top-down approach and a component of a larger international climate architecture.[60] Mehling and Haites focus in more detail on the mechanisms by which ETSs can be linked, including a discussion of the role of registries and registry accounts, and describe both current links (as at 2009) and potential future links.[61] Mehling and Haites acknowledge that, depending on how the schemes are linked, a 'mere' link between separate schemes can create a convergence between the independent schemes such that they blur into a single larger scheme.[62] Mehling and Haites also consider the alternative legal architectures for such linkages, such as a treaty versus reciprocal unilateral links.[63]

Sterk and Schüle are concerned with the economic implications of linking, at both a macroeconomic and microeconomic level, and provide a detailed description of emerging domestic ETSs.[64] Sterk and Schüle then focus on general scheme design issues and the need for harmonisation of scheme features that may impact on the success of potential linking arrangements, such as the stringency of the targets and whether borrowing and banking are allowed, and provide a very useful summary of the design features of the identified emerging schemes, in table format to allow for ease of comparison.[65] Tuerk et al[66] take a similar approach to assessing design features of ETSs in order to determine potential barriers to bilateral linking and identify particular elements of an ETS that can be significant challenges to linking.[67] Tuerk et al also identify additional architectures for linking, such as a loose

[60] Ibid 802-806.
[61] Michael Mehling and Erik Haites, 'Mechanisms for linking emissions trading schemes' (2009) 9:2 *Climate Policy* 169.
[62] Ibid 177.
[63] Ibid 179-180.
[64] Wolfgang Sterk and Ralf Schüle, 'Advancing the climate regime through linking domestic emission trading systems?' (2009) *14 Mitigation and Adaption Strategies for Global Change* 409.
[65] Ibid 422-423.
[66] Andreas Tuerk, Michael Mehling, Christian Flachsland and Wolfgang Sterk, 'Linking carbon markets: concepts, case studies and pathways' (2009) 9 *Climate Policy* 341.
[67] Ibid 347.

cooperation by way of a Memorandum of Understanding, an umbrella agreement that defines common ETS features or the creation of a supranational organisation.[68]

More recently, Haites provides a more generalised discussion of principles regarding scheme linking in light of practical experience to date to provide 'lessons learned'.[69] This more recent paper recognises another option, that the linked systems can adopt a common compliance instrument as an alternative to retaining the compliance instruments of the independent ETSs. Haites discusses three potential benefits from bilateral linking and also considers the risks and analyses the political constraints that may impact the decision to link.[70] Haites also summarises the design features of ETSs that must be harmonised for a bilateral link to succeed and makes specific reference to the now abandoned proposal to link the EU ETS to Australia's scheme as well as the California-Quebec link,[71] which are both considered in this thesis.

Most recently, Ranson and Stavins have gathered qualitative evidence from the experience with scheme linking over the last decade and identify the linkages currently in place as well as the economic, political and strategic factors that influence the decision to link ETSs.[72] Put into a broader context, Ranson and Stavins suggest that a top-down international agreement to reduce global emissions could produce a 'first-best solution' to climate change but that this option does not appear to be politically feasible and a more realistic, though imperfect and incomplete, response may be the growing network of decentralised direct linkages.[73]

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[68] Ibid 352-354.
[69] Erik Haites, *Lessons learned from linking emissions trading systems: General principles and applications* (Partnership for Market Readiness, Technical Note 7, 2014).
[70] Ibid 12.
[71] Ibid 16-18.
[72] Matthew Ranson and Robert N Stavins, 'Linkage of greenhouse gas emissions trading systems: learning from experience' (2016) 16:3 *Climate Policy* 284.
[73] Ibid 295-296.

Although these various works evidence that the issue of scheme linking has attracted significant academic attention, the focus of the analysis is largely on the design features of the ETSs and the need for a minimal degree of harmonisation if a link is to be sustainable. However, this literature does not extend the analysis to consider the domestic taxation systems of the relevant jurisdictions as a potential barrier to linkage and this thesis aims to fill this gap. Although the tax literature described above does to some extent consider tax consequences of emissions trading, it is limited to either an economic approach or, if technical tax law analysis is undertaken, it is generally restricted to domestic tax consequences. This thesis adds a truly comparative approach and also ventures into the international tax realm, which necessarily also requires a consideration of the operation of tax treaties.

Given the ubiquitous nature of the tax treaty network, a threshold issue to determining the international tax consequences of cross-border emissions trading is the determination of the provisions of the relevant tax treaty that are triggered by the transactions. Tax treaty negotiations generally take as their starting point either the OECD Model or the UN Model and therefore the text of those models as well as the Commentary to the various articles is critical.[74] In determining the article under the treaty that is triggered, Csikos examines the tax treaty implications of holding and dealing with emission permits under the OECD Model and concludes that income from realising a permit is unlikely to fall within Article 7 (business profits) unless it is held as inventory and, instead, Article 13 (capital gains) is more likely to apply.[75] These issues received more recent and detailed consideration as part of the work of

[74] OECD, *Model Tax Convention on Income and on Capital* (2014) and *Commentary* (2012) and United Nations, Department of Economic & Social Affairs, *Model Double Taxation Convention between Developed and Developing Countries* (2011), respectively.
[75] Katalin Csikos, 'International Tax Implications of Tradable Allowances' (2007) 47(3) *European Taxation* 135.

the Committee on Fiscal Affairs of the OECD.[76] The Committee's final report, issued after two rounds of stakeholder input, acknowledges that there is the possibility of disagreement regarding whether Article 7 or Article 13 applies to emission permit transactions but these two approaches are likely to produce identical results so there should be no difficulties in practice.[77] This work ultimately led to minor amendments to the OECD's Commentary on the Model in 2014 to clarify some of these issues.[78] The United Nations also considered these matters and issued a Note exploring their conclusions.[79] These issues are fully explored in Chapter Four.

The international tax analysis of cross-border emissions trading applies the international taxation of business profits to the specific context of emissions trading. These more general principles of tax treaty analysis have been considered by tax authorities, specifically the Commissioner of Taxation in Australia and HM Revenue & Customs in the UK, where this published advice provides a starting point for analysis.[80] A number of legal scholars have also provided commentary and analysis. Notably, Harris and Oliver provide a comprehensive consideration of the international taxation of commercial transactions with reference to both the OECD Model and domestic law.[81] Harris and Oliver also provide insight into the taxation of transactions involving permanent establishments (PEs) and

[76] See OECD Committee on Fiscal Affairs, *OECD Model Tax Convention: Revised Discussion Draft on Tax Treaty Issues Related to Emissions Permits and Credits, 19 October 2012 to 15 January 2013* (OECD, 2012).
[77] OECD Committee on Fiscal Affairs, *Tax Treaty Issues related to Emissions Permits/Credits* (OECD, 2014) [54].
[78] OECD, *2014 Update to the OECD Model Tax Convention and Commentary* (OECD, 2014). The most significant amendment in this regard was the insertion of a new paragraph 75.1 to the *Commentary* on Article 7. This new paragraph identifies the various Articles that may apply to emission permits and credits, reflecting the conclusions in the Revised Discussion Draft.
[79] United Nations, Committee of Experts on International Cooperation in Tax Matters, *Note on Tax Treaty Issues arising from the Granting and Trading of Emissions Permits and Emissions Credits under the UN Model Tax Convention* (2012) E/C 18/2012/CPR 6.
[80] For example, also Commissioner of Taxation, Australia, *Taxation Ruling 2001/13 Income tax: Interpreting Australia's Double Tax Agreements* (ATO 2001) and HM Revenue & Customs, *Double Taxation Treaties* <http://www.hmrc.gov.uk/taxtreaties/tax treaty.htm>.
[81] Peter Harris and David Oliver, *International Commercial Tax* (Cambridge University Press, 2010).

analyse the interaction of the OECD Model with UK domestic law.[82] Vann has written extensively on the operation of tax treaties[83] and together with Sasseville provides a comprehensive consideration of the operation of Article 7 of the OECD Model.[84]

In the context of the taxation of business profits, the taxation rights of the relevant jurisdictions will often depend upon whether the multi-national enterprise is conducting business activities through a PE and then to what extent the profits of the enterprise should be attributed to the PE (thereby providing a basis for the source country to assert the right to tax). The issue of attribution of profits to PEs has proved to be vexing one, leading the OECD to issues two detailed reports (in 2008 and then in 2010) whereby an 'authorised' OECD approach is adopted.[85] These reports detail the preferred approach to profit attribution and the implications of this approach are addressed in detail in a two-part article by Black.[86] Black analyses the consequences of the 'new' approach generally and also provides commentary from the perspective of the New Zealand revenue. In a more generalised way, Bernales compares and contrasts the separate enterprise approach to the authorised OECD approach and provides a chronological background to the change in approach.[87] Building on this, van Boeijen-Ostaszewska considers the extent to which the 'new' authorised OECD approach can be applied to pre-existing tax treaties, that is, tax treaties concluded prior to the 2010 amendments to the OECD Model, and highlights the issue of ambulatory or static

[82] Ibid 418-424.
[83] See, eg, Richard J Vann, 'Taxing International Business Income: Hard-Boiled Wonderland and the End of the World' (2010) 2(3) *World Tax Journal* 291.
[84] Jacques Sasseville and Richard Vann, 'Article 7: Business Profits' in *Global Tax Treaties Commentaries* (IBFD, 2014).
[85] OECD, *Report on the Attribution of Profits to Permanent Establishments* (2008) and OECD, *2010 Report on the Attribution of Profits to Permanent Establishments* (2010).
[86] Black, Andrea, 'Attribution of Profits to PEs: Implications of the "Authorized" OECD Approach (Part 1)' 21(2) 2010 *Journal of International Taxation* 18 and Black, Andrea, 'Attribution of Profits to PEs: Implications of the "Authorized" OECD Approach (Part 2)' 21(6) 2010 *Journal of International Taxation* 52.
[87] Roberto Bernales, 'The Authorized OECD Approach: An Overview' in Carlos Gutiérrez and Andreas Perdelwitz (eds), *Taxation of Business Profits in the 21st Century: Selected Issues under Tax Treaties* (IBFD, 2013).

interpretation of tax treaties.[88] Kosters and Offermanns build on this work to provide more jurisdiction-specific responses to the new approach, including those countries who have provided guidance on its application or who have specific legal provisions in place.[89] Kosters and Offermanns provide a brief description of relevant UK tax law with regard to the attribution of profits to PEs and a more detailed, but more generalised, discussion of these principles can be found in the text by Tiley and Loutzenhiser.[90] This literature is a starting point for the analysis of UK law considered in both Chapters Three and Four, which seeks to apply these general principles and analysis to the specific context of emissions trading, both domestic and cross-border.

3. The Research Question

Taxation systems have the potential to distort the price signal for emission permits in a multi-jurisdictional or linked ETS if the application of the tax systems to scheme transactions gives rise to inconsistent results. This thesis systematically examines whether the application of direct (ie income) taxes produces different tax outcomes by comparing the consequences under tax systems based on the regimes of Australia and the United Kingdom. These two jurisdictions are amenable to comparison as they both have common law systems, they have a shared legal history in many respects, including in taxation, and they have both been involved in ETSs. Australia was selected because it is one of the few jurisdictions that has developed specific tax rules applicable to permit trading transactions.[91] In comparison,

[88] Ola van Boeijen-Ostaszewska, 'The Applicability of the AOA to Existing Tax Treaties – A Matter of Interpretation?' in Carlos Gutiérrez and Andreas Perdelwitz (eds), *Taxation of Business Profits in the 21st Century: Selected Issues under Tax Treaties* (IBFD, 2013).
[89] Bart Kosters and René Offermanns, 'Implementation of the Authorized OECD Approach by OECD Member Countries' in Carlos Gutiérrez and Andreas Perdelwitz (eds), *Taxation of Business Profits in the 21st Century: Selected Issues under Tax Treaties* (IBFD, 2013).
[90] John Tiley and Glen Loutzenhiser, *Advanced Topics in Revenue Law: Corporation Tax; International and European Tax; Savings; Charities* (Hart Publishing, 2013).
[91] The only other jurisdiction identified to have enacted specific tax rules is New Zealand. With the establishment of an emissions trading scheme in New Zealand from 2008, a number of amendments to the *Income Tax Act 2007* (NZ) have been enacted to operate alongside ordinary tax principles. This differs from the

the UK was selected as it adopts the more common approach of relying on its ordinary taxation rules, which are drawn largely from accounting treatment. Although the rules are clearly different on their face, this thesis examines the impact of the rules, that is, whether they will give rise to different outcomes in practice.

Consistent with the law and economics literature that has to date considered the issue of taxation of carbon trading transactions (discussed above), the research question for the purposes of this thesis is limited to a consideration of the treatment of firms engaged in carbon markets due to their compliance obligations under the relevant schemes. It is acknowledged that firms may participate in carbon trading on the secondary market (post auction or allocation) for a number of reasons and the efficiency of the carbon market depends on a liquid secondary market. By way of illustration, according to a recent report by Thomson Reuters, the primary auction market for EU ETS allowances was 636 Mt in 2015 whilst the volume of the secondary market (exchange traded) was 3907 Mt.[92] A firm may be in the business of trading in commodities generally and may trade in emission permits and permit futures and option contracts in the same way as any other commodity or financial instrument, being a so-called 'carbon trader'. In such cases, emission permits and related contracts would likely be characterised as inventory for accounting and tax purposes, leading to specific revenue consequences. It may also be the case that a firm with compliance obligations engages in permit trading as an additional business activity or as a hedge against future permit price volatility. An analysis of the taxation treatment of carbon traders could well raise additional instances of violations of inter-firm neutrality but was excluded from this thesis in order to control its scope and to maintain consistency with the relevant law and economics literature on this topic.

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approach taken in Australia, where the new statutory rules are designed to apply to all transactions involving 'registered emissions units' and the new rules generally operate to the exclusion of other provisions of the tax act.

[92] Thomson Reuters, *Carbon Market Monitor: Review of 2015 and outlook 2016-2018* (2016).

4. Research Framework and Approach

The ultimate goal of this thesis is to determine if the application of the special tax regime designed by Australia for permit transactions creates differences in tax outcomes as compared to a UK-style approach in the context of multi-jurisdictional, linked ETSs and therefore whether the interaction of these tax systems violates the inter-firm neutrality criterion put forward by Kane[93] and could consequently undermine the efficiency of such a linked ETS. This thesis meets this objective by building up a picture of the taxation of permit transactions through three layers. Working backwards, international tax consequences are based on domestic tax rules that are in turn, in the UK and many other jurisdictions, based on accounting treatment. Therefore, this thesis devotes one chapter to each of these layers, from the foundation of accounting treatment to domestic tax treatment and then, ultimately, international tax consequences.

The approach of this thesis relies on the law and economics theoretical model developed by Kane, which takes as a starting point the presumption that taxation systems have the potential to distort the efficiency of the permit market, a result supported by the more recent work of Constantini et al (described above).[94] According to Kane, time and space (geography) are two of the 'key margins' along which taxation may lead to economic distortions[95] and both of these are apparent in a multi-jurisdictional permit market:

> Discrepancies in the tax treatment of permits across time and across countries thus pose potentially substantial obstacles to the cost-effective abatement of greenhouse gas emissions within what might otherwise by a well-functioning permit market in the absence of tax considerations.[96]

Discrepancies in tax treatment 'across time' can be seen to reflect differences in the recognition of relevant events for tax purposes. For example, a tax law regime that maintains

[93] See Kane, above n 33.
[94] See Constantini, above n 49.
[95] Kane, above n 33, 87.
[96] Ibid 89.

the realisation requirement for some asset classes will defer the taxation of gains until realisation (leading to the well-known lock-in effect) whilst a system that employs a revaluation approach for other asset classes will tax gains and losses as they accrue. On the flip side, certain expenses could be recognised on an accruals basis as liabilities are fixed compared to a cash-basis approach for other firm expenses (such as compliance expenses under an ETS that relies on permit surrender before compliance expenses are recognised). Discrepancies 'across space' can arise when there are disparate tax regimes across the jurisdictions participating in the multi-jurisdictional ETS. Although these two problems could be 'simply' fixed by requiring an accruals basis for assets and insisting on harmonisation of tax regimes across jurisdictions, Kane suggests that the particular regulatory context of ETSs calls for 'a more nuanced approach'.[97] Kane sets out the economic efficiency argument as follows:

> Market-based approaches such as cap and trade are meant to reveal superior information about least cost greenhouse gas emissions abatement opportunities, as compared to the information that is in the position of government regulators. Ideally, the tax system should not impede this process. Thus, if a properly functioning permit market in a world with no taxes successfully minimizes the cost of a particular amount of abatement, then it is the mark of a successful tax system that regulated actors choose the same set of abatement opportunities in a world with taxation. Tax instruments that lead actors to choose abatement opportunities outside this set produce abatement inefficiency.[98]

In this context, Kane develops the two alternative objectives of tax policy design: inter-firm neutrality (where different firms in the market face like tax treatment) and intra-firm neutrality (where any particular firm's various options (ie abatement vs permit surrender) face like tax treatment).[99] The scope of this thesis is restricted to considerations of the tax differences across firms in order to text for potential distortionary effects due to a violation of inter-firm neutrality.

[97] Ibid 91.
[98] Ibid 98.
[99] Ibid 93 and 100 et seq.

Kane provides further elaboration on the requirements for inter-firm neutrality and identifies that, to get a complete picture, the tax treatment of both abatement and permits must be considered. For the inter-firm neutrality condition to hold, abatement costs must receive the same tax treatment across firms and permits must face the same tax treatment across firms.[100] As a result, at the margin, all firms will face the same after-tax price of both permits and abatement,[101] and Kane concludes that the equilibrium point for the pre-tax market will be the same point in the after-tax market, thereby maintaining market efficiency.[102] Moving beyond the development of these norms, Kane then sets out mathematical expressions to represent the various options open to a firm (ie bank, borrow, abate, surrender) and tests these across a two-period model and with assumptions about tax rates to determine potential effects on efficiency. Kane concludes that inter-firm neutrality is likely preferable but that achieving this in a multi-jurisdictional market is likely to be difficult as it 'would require an unprecedented degree of harmonization across tax systems'.[103] This thesis addresses this issue from a different (legal doctrinal) perspective by moving beyond the theoretical modelling of tax systems to interrogate the extent to which the current tax systems do in practice lead to differences in tax outcomes (violating inter-firm neutrality) and thereby to identify those features of the tax systems that may need to be harmonised so as to maintain the efficiency of a multi-jurisdictional market.

The goal of this thesis is to evaluate whether tax systems currently in place provide the same tax outcomes in relation to carbon trading transactions and therefore have the potential to meet the goal of inter-firm neutrality and, if not, to develop recommendations with respect to a model of tax rules that could minimise potential distortions. To date there has been little in the way of detailed comparative legal doctrinal analysis of alternative

[100] Ibid 103.
[101] Ibid.
[102] Ibid 104-105.
[103] Ibid 139.

emission permit tax regimes. This thesis helps to fill this gap and makes three specific and significant contributions. First, by identifying and analysing the reported accounting treatment of emission permit transactions by high emitting entities in the EU, this thesis contributes to the accounting literature by providing a timely and wide-reaching study of these practices and identifies emerging patterns in accounting treatment. Second, this thesis provides a comprehensive comparative analysis of two representative tax regimes (Australia and the UK) in relation to domestic transactions involving emission permits and identifies strengths and weaknesses in the approaches taken to taxation. Although there has been some consideration of alternative tax regimes, this study contributes to the tax law literature through the careful selection of the jurisdictions considered, which highlights the different outcomes achieved by an accounting-based tax approach (the UK) and a specially designed set of statutory tax provisions (Australia). Third, this thesis extends the domestic tax analysis to encompass international tax law and tax treaty practice and undertakes a systematic analysis of the international tax treatment of multiple hypothetical cross-border permit transactions under a variety of scheme linking architectures. A study of this nature is unique in the tax law literature.

The results of the analysis will be of greatest value to tax and environmental policy makers from jurisdictions that are already operating or proposing to establish emissions trading. Aside from the specific tax rules developed in Australia that are analysed in this thesis, little consideration has, to date, been given to the design of the taxation rules that apply to emissions trading. However, as this thesis shows, the tax rules have the potential to operate in a way that could undermine the efficiency of carbon markets and therefore demand greater attention from lawmakers. The ultimate findings regarding the compatibility of tax systems would also be valuable to finance ministries considering adopting a set of tax rules based on the Australian model.

The theoretical framework that informs this thesis is positivism, whereby the social or, in this case more specifically, legal reality is objectively explained.[104] This approach is based on the assumption that 'knowledge is created by deductive reasoning … [involving] a precise and structured process leading to the identification of causal relationships, logical conclusions and the making of predictions'[105] – in this case, predictions of taxation consequences for permit transactions. Consistent with a framework of legal positivism, 'knowledge about [the legal] reality is created by the systematic process of identifying, analysing, organising and synthesising statutes, judicial decisions and commentary as expected of doctrinal or "black letter law" research.'[106] As described by Chynoweth, a 'complete statement of the law' in the relevant situation can only be determined by 'applying the relevant legal rules to the particular facts'.[107] Further, this process as applied in this thesis employs deductive reasoning in that the taxation laws of the identified jurisdictions are systematically analysed to determine the relevant tax law rules (the major premises) and the ETS operational rules are considered to identify the particular permit transactions at issue (the minor premises) so that a conclusion can be made as to whether the specified legal outcome (ie income or deduction) has effect.[108] This thesis employs a mixed methodology, utilising content analysis, the legal doctrinal methodology, and a comparative methodology, as described below.

[104] Margaret McKerchar, *Design and Conduct of Research in Tax, Law and Accounting* (Thomson Reuters, 2010) 72.
[105] Ibid.
[106] Ibid 73, referring to Dennis Pearce, Enid Campbell and Harding Don, *Australian law schools: a discipline assessment for the Commonwealth Tertiary Education Commission* (Australian Government Printing Service, 1987) 309.
[107] Paul Chynoweth, 'Legal research' in Andrew Knight and Les Ruddock (eds), *Advanced Research Methods in the Built Environment* (Wiley-Blackwell, 2008) 29.
[108] Ibid 32.

5. Organisation of the Thesis and Research Methodologies

This thesis is presented in the thesis by publication format and includes three related research papers that address different aspects of the research question, as well as a conclusions chapter. Each paper contains its own references in the form prescribed by the publisher and an integrated, complete reference list is also provided.

Chapter Two is based on Paper 1, entitled 'Accounting for Carbon Emission Allowances in the European Union: In Search of Consistency'. This paper was published in *Accounting in Europe* in late 2013. Although this thesis is primarily directed at an examination of taxation law, it was determined early on that an analysis of accounting practice was also necessary. In many jurisdictions, including the UK, taxation laws take accounting profits as their starting point and it is therefore necessary to determine the accepted accounting practice in relation to emission permits in order to determine how those profits are calculated. Since 2005, EU listed companies are required to prepare their consolidated accounts based on International Accounting Standards, International Financial Reporting Standards and related interpretations, where these standards must be endorsed by the European Commission before they are binding.[109] However, as there is still no internationally agreed approach to accounting for emissions trading transactions, it was necessary to identify actual practice. Paper 1 adopts a qualitative methodology in order to determine accounting practice in this regard by employing the content analysis method,[110] which is a 'systematic, replicable technique for compressing many words of text into fewer

[109] *Commission Regulation (EC) No 1725/2003 of 29 September 2003 adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council* [2003] OJ L 261/1. Endorsed standards are published in the EU Official Journal. A complete and up-to-date EU endorsement report is maintained by the European Financial Reporting Advisory Group: see EFRAG, *Endorsement Status Report* (2015) <http://www.efrag.org/Front/c1-306/Endorsement-Status-Report_EN.aspx>.
[110] See generally Klaus Krippendorff, *Content analysis: an introduction to its methodology* (Sage, 3rd ed, 2013).

content categories based on explicit rules of coding.'[111] This approach encompasses systematically identifying and coding the disclosures of accounting practices in the published financial statements of high emitting entities based in the EU. This is accompanied by 'refining and categorising information' to 'draw inferences and meaning'[112] from the coded information and thereby identify patterns of accounting practice.[113] Three patterns in the accounting approaches are identified and the two more common approaches are used as the starting point for the tax analysis in Paper 2. In addition to an introduction to the paper, two appendices are included in Chapter Two to provide further information about the study. Appendix 1 is the Coding Sheet and Appendix 2 is the complete list of the companies included in the study.

Chapter Three is based on Paper 2, entitled 'Approaches to the Taxation Treatment of Carbon Emission Allowances and Liabilities: Comparing the United Kingdom and Australia'. This paper was published in the *British Tax Review* in mid-2013. Paper 2 commences with an evaluation of the design features of the EU ETS and Australia's now repealed Carbon Pricing Mechanism (CPM) in order to identify the three key tax issues in relation to ETS transactions: the treatment of free allocations; the timing and valuation of the compliance expense; and the asset characterisation of permits for tax purposes. With the knowledge of accountancy practice gained from Paper 1, the consequences of the application of the UK Corporation Tax are determined and compared and contrasted with the approach adopted in the Australian income tax legislation. Paper 2 adopts a doctrinal legal research methodology based on an analysis of how the legal rules in place apply to the specific situation of emissions trading. This methodology relies on 'a distinctly deductive form of legal

[111] Steve Stemler, 'An overview of content analysis' (2001) 7(17) *Practical Assessment, Research & Evaluation* 137.
[112] Terry Hutchinson, *Researching and Writing in Law* (Thomson Reuters, 3rd ed, 2010) 127.
[113] McKerchar, above n 104, 97.

reasoning'[114] and provides 'a detailed and highly technical commentary upon, and systematic exposition of, the content of legal doctrine.'[115] It involves 'a two-part process… first locating the sources of the law and then interpreting and analysing the text.'[116] Paper 2 employs both the doctrinal legal research and comparative methodologies. This involves the identification of the relevant taxation legislation and applying that law to the particular context, being transactions that arise from the operation of an ETS. However, this paper goes beyond mere description and incorporates a comparative method in order to achieve the goal of 'identifying solutions to specific or novel legal problems'.[117] By comparing the consequences arising from the application of the alternative tax law approaches to the identified ETS transactions, strengths and weakness in the two approaches can be identified.

Chapter Four is based on Paper 3, entitled 'Taxation of Cross-Border Transactions involving Carbon Emission Permits and Linked Emissions Trading Schemes'. This paper has been written for publication but is not yet published. Papers 1 and 2 are concerned with analysing single jurisdiction emission permit transactions and Paper 3 builds on this to examine the potential tax consequences on cross-border permits transactions that could arise under linked trading schemes. The goal of this paper is to more explicitly determine if the impacts of the two tax systems on such transactions could meet the goal of inter-firm neutrality as proposed by Kane. Three potential architectures for linking are described (common registry, direct link and indirect link), as the form of linking will affect the form of the trading transactions, and therefore the tax impacts. A so-called 'base case' set of tax rules, based on UK taxation and accounting principles, is developed to compare and contrast with the Australian statutory approach in the context of cross-border transactions. Principles of

[114] Ibid 115.
[115] Michael Salter, and Julie Mason, *Writing law dissertations: An introduction and guide to the conduct of legal research* (Pearson Longman, 2007) 49.
[116] Terry Hutchinson, and Nigel Duncan, 'Defining and describing what we do: Doctrinal legal research' (2012) 17(1) *Deakin Law Review* 83, 110.
[117] Ibid 118.

international taxation, both under domestic law and tax treaties, are drawn out with specific emphasis on those principles enlivened by permit transactions. With these frameworks in place, six hypothetic transactions are considered under alternative presumptions that include variations in linking architectures, domestic tax rules and international tax approaches. Like Paper 2, this paper adopts a doctrinal legal research method and comparative methodology.

Chapter Five summarises the findings of the three studies and presents overall conclusions. Chapter Five also provides suggestions for future directions for research in this subject area. A full list of references completes the thesis.

With respect to nomenclature, both emissions trading systems and the relevant literature have adopted a variety of terms for the instruments created and traded under the schemes, including emission permits, allowances, rights and units, and emissions permits, emissions allowances, etc. For the purposes of this thesis, the term ‘emission permits’ is adopted as it is most commonly used today in the literature. However, given that Papers 1 and 2 were published in Europe, the term ‘allowances’ is used in the text of those papers as that is the term employed under the EU ETS.

CHAPTER TWO: ACCOUNTING FOR CARBON EMISSION ALLOWANCES

INTRODUCTION TO PAPER 1

The purpose of this thesis is to determine whether and how the income tax treatment of transactions involving carbon emission permits differ across jurisdictions in order to evaluate the strengths and weaknesses of the various approaches and, more critically, to consider whether any identified diversity in tax treatment of carbon trading transactions across firms carrying on business in different jurisdictions could potentially undermine the efficiency of a multi-jurisdictional carbon market by violating Kane's inter-firm neutrality goal. This chapter examines the accounting treatment of such transactions as a starting point in this analysis. The two most commonly utilised approaches that are identified by the study are used as the basis for the UK tax analysis in Chapter Three.

Many income tax systems, including that of the United Kingdom,[1] rely on accounting profits as the starting point for determining business profits that are subject to taxation. The accounting profits figure is then adjusted by way of specific tax provisions to lead to taxable income/profits.[2] Therefore, determining if there is any diversity in the tax consequences of an identified transaction across jurisdictions requires an understanding of the underlying accounting treatment and then an identification and application of the relevant domestic tax laws.

The International Accounting Standards Board (IASB) has developed an extensive framework of accounting standards that addresses many of the issues faced by business today

[1] *Corporation Tax Act 2009* (UK) s 46.
[2] For example, the intangible fixed asset regime in pt 8 of the *Corporation Tax Act 2009* (UK) provides rules regarding the recognition for tax purposes of impairment reviews and upward revaluations.

but, in the case of carbon emission permits, a consensus has not yet been reached as to the most appropriate approach. In order to undertake the analysis of taxation consequences in the United Kingdom that forms part of Chapter Three without the benefit of IASB guidance, it is necessary to determine how such transactions are actually being treated in the financial accounts and therefore how and when expenses and profits from carbon emission transactions are reflected in accounting profits. Although three previous studies have been undertaken into this issue, they each have a perceived weakness. As such, the study reported in the following paper was undertaken to produce a more up to date and robust picture of the relevant accounting practices. The study employs a content analysis method to systematically identify and code the accounting practices of the relevant entities and these results are then analysed in order to determine if there are any consistencies in approach.

The study reported in Paper 1 fails to find a consensus in accounting treatment. For those jurisdictions basing tax outcomes on accounting treatment, this conclusion alone supports a view that diversity in tax treatment does exist which could lead to distortions in the carbon market in violation of inter-firm neutrality. However, the study does reveal three main patterns in treatment that can be used as a basis for evaluating the systems for inter-firm neutrality. The most popular approach (referred to in the paper as the 'net liability approach') records free allocations at a nil value and only shows a compliance expense when it exceeds the level of free allocations. The valuation of this liability is based either on a carrying (book) value of permits on hand (as intangible assets) or market value. The second most popular approach (the 'gross liability approach') recognises free allocations at fair value on receipt but then also shows a compliance expense equal to the total permits needed to meet the liability (including the value of those received gratis). For the purposes of testing for inter-firm neutrality, if it is assumed that both firms are in a net expense position (that is, the compliance expense exceeds the free allocation), these two approaches would likely produce

the same (net) expense being the number of additional permits needed above the free allocation to meet the compliance obligation: the net liability approach would only show the net (excess) expense and whilst the gross liability approach would show the total scheme liability this would be offset by the recognition of the free allocations as income/assets and these two entries would net out to reveal the excess liability. This would not violate inter-firm neutrality but there could be a difference in tax outcome in relation to the valuation of the expense, where the evidence suggests variations in practice between using the book value of purchased permits and the market value of permits. This difference would be reconciled in the following period when the liability is satisfied but the timing difference would remain. However, if the firms have excess free allocations the revenue outcome is quite different as the firm adopting the net liability approach would not recognise the excess allowances as income (given their nil value for book purposes) whilst the firm adopting the gross liability approach would recognise this fair value as a gain.

The third identified accounting approach is broadly similar to the net liability approach except that permits are recognised as inventory rather than as intangible assets. If this accounting characterisation were to flow through to tax, this could also produce distortions compared to the other methods. Both accounting and tax systems contain special rules to deal with inventory in recognition of the nature of the dealings of the firm with this asset class compared to investment or capital assets and the difficulties in identifying specific items of inventory that are being dealt with in any particular transaction. A firm holding permits as inventory may value those permits on a mark-to-market basis, thereby recognising both increases and decreases in value for accounting and tax purposes on accruals basis, whilst another firm that holds permits at intangible assets would generally only recognise any

increase in value on realisation.[3] The flow-on effect of the different asset accounting rules for tax purposes could also result in inconsistent tax outcomes in violation of inter-firm neutrality.

Paper 1 was published in *Accounting in Europe*[4] in October 2013 and the study is therefore presented here in the form in which it was published: (2013) 10:2 *Accounting in Europe* 223-239. The paper uses the term 'emission allowance' in lieu of 'emission permit' to reflect the terminology employed in Europe. By way of additional information to that included in the published paper, Appendix 1 shows the coding sheet that was developed for the purposes of this study. This was designed to pick up the common themes from the earlier studies on this topic, so that the results of this new study could be compared with those done previously, and also incorporates issues that were specifically relevant for the tax analysis that follows in Chapter Three. Appendix 2 provides a complete list of the entities included in the study and the location of their head offices. Only those entities that disclosed their accounting practice in relation to emission allowances in their accounts are included in the study. The primary materials, spreadsheet of coding results and other documentation are on file.

It should be noted that IFRS has recently recommenced a project on accounting and emissions trading under the new name 'Pollutant Pricing Mechanisms'.[5] As this work only commenced in late 2014, it is not referred to in Paper 1 (published in 2013). A variety of

[3] For accounting purposes, the conservative approach could dictate that decreases in value be recognised by a write down but increases in value are generally not recorded until realised. In many tax systems, a realisation event (such as a sale) would be necessary before either an increase or decrease in value would be recognised for assets other than inventory.
[4] *Accounting in Europe* is an international scholarly journal of the European Accounting Association published by Routledge.
[5] IFRS, *Work Plan for IFRSs: Pollution Pricing Mechanisms (formerly Emissions Trading Schemes)* (2015) <http://www.ifrs.org/current-projects/iasb-projects/emission-trading-schemes/Pages/Emissions-Trading-Schemes.aspx>.

papers have been released which canvas the accounting issues but IFRS has not yet made any recommendations.

In October 2015, IFRS released a staff paper putting forward a project overview, which included a plan to develop a Discussion Paper for publication in the first half of 2016.[6] The topics identified in the appendix to the paper include the issue of characterising allowances as an asset type and the treatment of emissions obligations as liabilities, two issues also considered in Paper 1. The accompanying powerpoint slides contain further elaboration on the various issues raised and canvass a variety of alternatives that are consistent with those identified in Paper 1.[7] On the liability issue, IFRS questions when this should be recognised (suggesting as emissions are made during the period, an accruals basis) and how it is to be measured (suggesting current value). The slides also frame these issues in relation to baseline-and-credit schemes, a scheme type not within the scope of this thesis. The slides also consider the issue of asset characterisation, asking whether allowances should be recognised as intangibles, inventory, financial assets or another class and asking how they should be recognised (fair value or cost and acknowledging that a difference treatment may be necessary for purchased versus freely allocated or based on the reason they are held). There is also consideration of the interaction of the emissions liability and free allocations.

More recently, in April 2016, IFRS released a Project Update.[8] The paper describes many of the same issues covered in the earlier powerpoint presentation and reiterates that diversity of accounting treatment persists. There is also an acknowledgement that some of these issues arise in relation to IAS 20 (Government Grants), an issue also described in Paper

[6] IFRS, *IASB Meeting—Education session, Project – Pollutant Pricing Mechanisms, Agenda Paper 6—Project Overview* (2015).
[7] IFRS, *IASB Meeting—Education session, Project – Pollutant Pricing Mechanisms, Agenda Paper 6A—ETS Issues* (2015).
[8] IFRS, *IASB Meeting—Education session, Project—Pollutant Pricing Mechanisms, Agenda Paper 20—Project Update* (2016).

1, and the ‘net’ presentation approach is acknowledged, where this appears to be equivalent to the ‘net liability approach’ identified in Paper 1. Interestingly, the Project Update summarises feedback IFRS has received with respect to how important this project is to standard setters, accountancy bodies, the investor community and others and the results are mixed. Therefore, although the Project Update outlines the next steps to be taken by the Board, no strict deadlines for the release of these papers are provided and it is unclear how urgently these matters will be attended to by IFRS.

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Accounting for Carbon Emission Allowances in the European Union: In Search of Consistency

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ABSTRACT With the commencement of Phase III of the European Union Emissions Trading System (EU ETS) in 2013, it is projected that approximately one-half of emission allowances will be acquired through auctioning and the provision of free allocations to installations will be substantially tightened. As a result, it is likely that many companies will hold purchased (as opposed to freely allocated or gratis) allowances and will have more significant liabilities under the scheme. The accounting treatment of emission allowances has therefore become more relevant and the lack of uniformity in practice that resulted after the withdrawal of IFRIC 3 is now a more pressing concern. This study uses content analysis to examine disclosed accounting policies of companies with significant emission liabilities under the EU ETS and identifies three more common approaches adopted to date. These can be generally described as the following: (i) a net liability approach, based on the classification of allowances as intangibles but only showing an emission liability when it exceeds the free allocation; (ii) an approach broadly based on IFRIC 3 (recognising the free allocation at fair value and a corresponding gross liability under the EU ETS); and (iii) an approach based on inventory classification, with free allocations given at nil value. The diversity in these treatments highlights the need for guidance from the International Accounting Standards Board.

1. Introduction

With an increasing number of countries adopting emissions trading schemes as part of their response to the threat of climate change, the financial accounting treatment of transactions involving carbon emission allowances across these

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jurisdictions and the companies operating therein is becoming more important.[1] The prospect of bilateral linking agreements, such as that recently announced between the European Union Emissions Trading System (EU ETS) and Australia's Carbon Pricing Mechanism (EC and Combet, 2012), also highlights the need to consider the implications of cross-border allowance flows. The International Accounting Standards Board (IASB) failed to produce a lasting solution after the withdrawal of IFRIC 3 in 2005 and entities participating in these markets now have little guidance with respect to these issues. The lack of uniformity makes it difficult to compare the financial statements of these entities and a low level of disclosure may result in limited usefulness. Not only are financial statements important for their own purposes, including providing information to investors regarding the financial performance, but accounting profits are increasingly relied upon as the starting point for determining taxation obligations, thereby impacting government revenue.[2]

Given the failure to date of the international accounting community to arrive at a consensus regarding the proper accounting policies with respect to carbon allowances, the determination of accounting approaches adopted in practice by companies operating within the EU is relevant and this study seeks to contribute to the identification of such practices. This study applies a content analysis method to determine the accounting policies adopted by a sample of EU-based companies. Three previous studies examining this issue have been published (PWC, 2007; Lovell *et al.*, 2010; Warwick and Ng, 2012) but the current study represents a significant contribution to this existing research as it is based on a larger sample of companies that operate across a greater range of emissions-intensive sectors and looks to more recent accounting disclosures. The approaches taken to the identified issues and their impact on accounting profits will be compared and contrasted.

2. Background

Of the emissions trading schemes that have been established to date, there are several common design features that give rise to common accounting issues. The discussion here will focus on the EU ETS, given the scope of this study, and will merely highlight these issues as there are many other resources available that provide a more detailed consideration of the design and operation of the EU ETS.[3]

Phase II of the EU ETS ran from 2008 to 2012, corresponding to the first Kyoto commitment period. During this phase, a significant feature of the scheme continued to be the free allocation of the majority of allowances as a form of grandfathering (referred to simply as 'allocations' in this paper, as distinct from purchased allowances). Under each Member State's National Allocation Plan (NAP), an annual allocation was determined on an installation basis. In this phase, Member States were permitted to auction up to 10% of their national allocation but in practice very little auctioning took place in most Member States, with the exception of Germany and the UK.[4] The effect of the gratis allocation

process, combined with allowances set aside for new entrants, was that companies with significant liabilities under the EU ETS received signification allocations. The recent economic slow-down in Europe has generally reduced the demand for industrial production, leading to a reduction in emissions. This, coupled with the high allocation levels, led to many companies reporting an excess of free allocations over emission liabilities for 2011.

Another feature of the EU ETS, which is common to other similar schemes, is that there is a necessary lag between the emissions year and the allowance surrender date. Although emissions are measured based on the year ended 31 December, the annual emissions report must be verified by 31 March and companies have until 30 April to surrender the necessary allowances. As a result, for accounting purposes, a liability should be recognised as emissions are produced, where this liability is met with property (allowances), rather than money, in the following period. This raises issues relating to the valuation of the liability.

To date, given the high levels of free allocations, many companies have not had significant net liabilities under the EU ETS. That is, their emission liabilities have been largely or entirely offset by the free allocations of allowances. This could result in an entity taking the view that emissions-related assets and liabilities are immaterial for reporting purposes. The high level of allocations has also meant that companies have had less incentive to purchase additional allowances, even though allowances may be carried forward to future periods (referred to as banking). However, the accounting treatment of these transactions will gain far greater significance and is likely to become more clearly material in Phase III of the scheme given the overall shift towards auctioning and the withdrawal or reduction of allocations.[5] This is expected to mean that many companies will move to a net liability position and will be required to purchase allowances to meet that liability.

The issues surrounding the identification of the most appropriate way to reflect allowance transactions for accountancy purposes stem from the interaction of three accounting standards, all which have been endorsed by the EU. In most cases, ETS allowances meet the IFRS definition of intangible asset (IAS 38, paras 8 and 10) such that IAS 38 *Intangible Assets* would require them to be recognised initially at cost, subject to amortisation and impairment, where appropriate, under the cost model (an alternative approach would be to classify allowances as inventory).[6] This reliance on cost is not problematic for purchased allowances but, as described above, to date most allowances have been allocated for free. Such an allocation is a 'government grant' as defined for the purposes of IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance*. IAS 20 and IAS 38 provide an option to record a grant received in kind either at its fair value (with corresponding deferred income) or at nominal value (where the income would thereby be recognised through profit on sale of the asset) (IAS 20, para. 23; IAS 38, para. 44). Finally, the emission obligation under the EU ETS should be recognised as a provision consistent with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, given that it is a

present obligation as emissions are produced, where the issue of determining the best estimate of the expenditure required to meet the obligation becomes relevant (IAS 37, paras 14 and 36).

On the eve of the commencement of the first phase of the EU ETS, in December 2004, the IASB's International Financial Reporting Committee issued IFRIC 3 *Emission Rights*, an interpretation addressing these various issues. As noted by Bebbington and Larrinaga-Golzález (2008, p. 704), in IFRIC 3 the IASB followed the approach to accounting for the US SO_2 emissions trading scheme advocated by Wambsganss and Sanford (1996), who argued that all allowances (purchased and allocated) should be recognised on the balance sheet, picking up the fair value of allocations on receipt. In short, IFRIC 3 put forward an approach whereby all allowances, both allocated and purchased, would be classified as intangible assets. Free allocations would be recognised at their fair value on receipt and the difference between the fair value and cost (nil) would be recognised as a government grant (deferred income recognised systematically over the period). As emissions are produced, a liability under the EU ETS would arise and the best estimate of this obligation would give rise to a provision equal to the then market value of allowances needed to meet the obligation. Allowances would also be tested for impairment and could be revalued but such adjustments would be reflected outside profit and loss (in the balance sheet).

As described in detail by Cook (2009), the recommendations of the IFRIC were based on the application of existing IASs but this led to what he calls 'some very strange results' (Cook, 2009, p. 462) and IFRIC 3 was met with controversy. The European Financial Reporting Advisory Group (EFRAG, 2005) recommended that the EU Commission should not endorse it and it was withdrawn only six months after issue, in June 2005. The assessment of IFIRC 3 by the EFRAG highlights the concerns that were expressed at the time and since regarding the 'gross' approach taken. EFRAG (2005) identified a significant mismatch arising from the fact that revaluations of allowances would be reflected in equity whereas revaluation of the liability would be reflected in profit and loss. In addition, it has been argued that a more correct reflection of economic reality would only show a liability once the level of emissions exceeds the level of free allocation and therefore a net liability or offsetting approach is more appropriate (Cook, 2009, p. 461; Deloitte, 2009, pp. 16–17).

In 2008, the IASB agreed to work jointly with the US Financial Accounting Standards Board (FASB) to develop an approach to emissions trading. Several meetings were held but the project was paused in November 2010 pending a determination of the future agenda for the IASB, which merely reaffirmed emissions trading schemes as one issue for future research.[7] Several tentative decisions have been arrived at. The IASB and FASB tentatively concluded that both purchased and free allocations should be recognised as assets and that a corresponding liability would also arise on allocation. Discussions continued through 2010 on the issues including the recognition of the liability under the ETS in excess of the free allocation, the measurement of purchased allowances

and the recognition of assets and liabilities (whether a net basis was acceptable) but these issues were not resolved when the project was paused. With the lack of specific guidance on these issues, companies have developed a variety of approaches to accounting for these assets and liabilities, which forms the focus of this study.

3. Literature Review

In addition to a number of articles that have generally discussed the accounting issues related to carbon allowances (Bebbington and Larrinaga-González, 2008; Cook, 2009; Deloitte, 2009; Fornaro *et al.*, 2009), three major studies have been undertaken that seek to identify the actual approaches being adopted within Europe. The design features of these studies are described in this section and the results are contrasted in the discussion section below.

The earliest study was undertaken by PricewaterhouseCoopers in conjunction with the International Emissions Trading Association (PWC, 2007). PWC (2007) took the form of a survey, where a total of 26 responses were received and analysed for the purpose of determining the accounting practices in relation to carbon allowances as well as certified emission reduction units. At the time of this study, the EU ETS was still in its first phase (and therefore net liabilities were unlikely) and IFRIC 3 had been recently withdrawn (in June 2005). PWC (2007) does not identify the criteria used to select the companies for participation in the survey beyond that they were major organisations that were significantly affected by the EU ETS.

A second study by Lovell *et al.* (2010) was sponsored by the Association of Chartered Certified Accountants. Lovell *et al.* (2010) was based on a review of disclosures in published financial statements as well as follow-up telephone interviews. Companies were selected based on information provided in the European Commission's Community Independent Transaction Log, where a total of 68 installations were identified as those responsible for approximately 26% of EU verified emissions in 2008. Once ownership of each installation was determined, a total of 26 organisations were identified for examination. The financial statements of these 26 companies for 2008 were analysed and the researchers followed up with invitations to participate in telephone interviews, of which five agreed (19% response rate). The data analysis provided includes all surveyed responses, included those companies that did not disclose their accounting practices in this regard.

Most recently, Warwick and Ng (2012) also applied a content analysis approach to published financial statements of companies in order to identify accounting practices in relation to carbon in the EU. Warwick and Ng (2012) selected companies by reference to the Carbon Monitoring for Action (CARMA) database, from which the 250 highest ranked emitters were selected. Reference to the CARMA documentation indicates that this database covers the power sector only. Although power generation does contribute significantly to

emissions world-wide, as well as in Europe, this limitation to the original sample could limit the applicability of the conclusions to other sectors. From these 250 companies, Warwick and Ng (2012) sought to obtain published 2007 financial statements that were available via the Internet. Once excluding non-English reports and reports that did not disclose the accounting treatment of allowances, the ultimate sample was of 47 companies.

The current study seeks to build on these previous studies and add to the body of information available regarding the accounting practices in question. To allow for ease of comparison of results, the data coding descriptors have been largely based on those used in the earlier studies but the sample is more inclusive (as described below) and the financial reports analysed are more recent (largely being those from 2011 financial year). Although Warwick and Ng (2012) has quite recently been published, it relates to behaviour in the 2007 financial year (still in Phase I of the EU ETS) whereas the issue of accounting for emission allowances has become far more critical by 2011, with the introduction of limited auctioning in Phase II and the impending removal of free allocations for the power sector, which commenced in 2013.

4. Research Design and Sample

The research method of this study involved an examination of the year-end financial reports of the selected companies to determine the accounting policies adopted in relation to the treatment of carbon emission allowances, with the focus being on the asset characterisation and valuation of allowances and the treatment of emission liabilities. As a form of content analysis, specific terms were identified as relevant to revealing such accounting policies. The unit of analysis, or form of communication, that has been examined is the published financial statements for the 2011 financial year.[8] The concepts were coded on the basis of existence within a particular annual report and not on the basis of frequency. In most instances where the accounting policies were disclosed, such information was included in the accounting policies section of the notes to the financial statements but there was often additional valuable information found in the other notes to the accounts.

One point of distinction in relation to this study in contrast to previous studies is the method by which the sample was determined. The starting point in developing the list of potential inclusions in the sample was the NAPs for Stage II of the EU ETS for the highest emitting Member States, being Germany, Spain and the UK. The allocations provided to installations under the NAPs were based on historic emission levels and therefore provided a good proxy for emission levels into the 2011 period. Installations receiving an annual allocation of at least 150,000 allowances formed the first sample pool, where these installations were then grouped by owner-operator. The cut-off of 150,000 allowances was selected as a minimum at which the accounting treatment of allowances was more likely to be considered material and also as a way to ensure that only the

higher emitters would be included in the sample. In most cases, the owner-operator was part of a larger corporate group where the consolidated group financial reports were the relevant unit of analysis. The sample was restricted by the availability of published accounts (thereby excluding private companies) and accounts being available in either English or Spanish. As the focus of the current study is on accounting in Europe, those corporate groups based outside of Europe were also excluded as were those companies whose reports did not disclose the treatment of allowances. Ultimately, a sample of 62 companies was identified and coded, with the data obtained from this group forming the basis of the current analysis. Table 1 illustrates the spread of locations of the companies included in the sample. In each case, the company has been listed in the country where the head office or parent company is located. In the majority of cases, these companies have operations throughout Europe, if not world-wide.

The sample also represents a diversity of sectors. For the purpose of compiling the data for Table 2, the main area of operations for each corporate group or entity was determined. In several cases, operations covered more than one sector so only the most significant was identified. In the case of the 'energy' sector, this includes oil and gas operations, LNG, and renewables but does not include electricity generation.

The sector with the largest representation in the data sample is electricity generation but there is also a significant spread across other activities and industrial sectors. Under Phase II of the EU ETS, electricity generation installations generally received the highest number of free allocations under the country NAPs but this assistance is being withdrawn in Phase III (starting in 2013).

Table 1. Countries represented

Country	Number	Percent
Austria	3	4.8%
Belgium	1	1.6%
France	6	9.7%
Finland	3	4.8%
Germany	13	21.0%
Ireland	1	1.6%
Italy	2	3.2%
Luxemburg	3	4.8%
The Netherlands	1	1.6%
Norway	1	1.6%
Poland	1	1.6%
Portugal	1	1.6%
Spain	14	22.6%
Sweden	3	4.8%
Switzerland	3	4.8%
UK	6	9.7%
Total	62	100.0%

Table 2. Sectors represented

Industry sector	Number	Percent
Electricity generation	18	29.0%
Paper/timber	11	17.7%
Energy	10	16.1%
Cement	8	12.9%
Chemicals	7	11.3%
Steel	3	4.8%
Glass	2	3.2%
Bricks	1	1.6%
Food	1	1.6%
Waste management	1	1.6%
Total	62	100.0%

Along with the overall reduction in level of free allocations in Phase III, carbon leakage risk determinations will be required for the continuation of a free allocation to other sectors and the method of calculating the allocations will also change to one based on benchmarks. Allocation decisions will be made at the Commission level based on information provided by countries through national implementation measures, which replace NAPs. Given the various changes to the allocation system, it is suggested that free allocation data may no longer be the best method of identifying high emitters in Phase III but an alternative source of relevant information may be the public site for the European Union Transaction Log that was activated in August 2012, where the data available through this site includes verified emissions at the installation level.

5. Results and Discussion

The emphasis of this study is the identification of the accounting practice in relation to emission allowances and liabilities. In relation to allowances, the characterisation of the asset is important as it will impact on the options for revaluation and the treatment of expenses. In the case of gratis allocations, as highlighted above in relation to IFRIC 3, a critical issue is whether the receipt of such an allocation is the receipt of a government grant that should therefore be returned as income based on the fair value of the allocation or at cost (nil), and either as deferred or earned income. This then has implications for the value at which the free allocation is reflected in the accounts. The treatment of the liability under the EU ETS is also fundamental. A decision must be made whether to show this as a net or gross liability (net or gross of the free allocation) and the basis for its valuation. These issues informed the approach to coding.

The main finding of this study, consistent with other studies to date, is that there continues to be a diversity of approaches to the accounting practices in relation to carbon allowances. However, a number of trends can be identified:

- The majority of companies (69.4%) recognise allowances as intangible assets.
- The majority of companies (62.9%) record free allocations at nil value in the balance sheet.
- Of the companies that recognise allowances in inventory (14.5% of the sample), all but one (88.9% of the sub-sample) record free allocations at nil value. Where the allowances are treated as intangibles, the valuation of allocations at nil or market value is mixed.
- The majority of companies (56.5%) only show a liability under the EU ETS where the liability exceeds the free allocation. This logically should, and in all cases does, follow from the valuation of the free allocation: if the free allocation is valued at market value, the liability is shown as a gross amount; and if the free allocation is valued at nil, the liability is shown as the net amount.
- Where allowances have been included in intangible assets, of those who did disclose the details of their treatment, no companies amortised the cost of the allowances but all subjected the allowances to impairment reviews.

5.1 Characterisation of Emission Allowances

For the purposes of this study, the annual reports were examined to determine the asset characterisation of both free allocations and purchased allowances (see Table 3). Although the reports were coded with respect to both of these types of allowances, in no case was there a difference in treatment recorded, so the results are not separated out between the types. In a small number of instances (four companies), allowances held to meet EU ETS liabilities are held as intangibles but a trading portfolio is also held, where these allowances are held as inventory. For the purposes of the coding for this study, only the treatment of those allowances held to meet liabilities has been recorded. However, this highlights the fact that carbon allowances have a dual character, that of an asset held to meet business expenses as well as a tradeable commodity, and therefore a more complex accounting approach may be necessary that reflects both of these aspects.

The level of characterisation as intangibles (69.4%) reflects the conclusions of previous studies that this is the most common approach. The results here are

Table 3. Characterisation of emission allowances

Asset type	Frequency	Percent
Inventory	9	14.5%
Intangible asset	43	69.4%
Financial asset	0	0.0%
Other	3	4.8%
Not disclosed	7	11.3%
Total	62	100.0%

closest to those found by PWC (2007, p. 13) (intangibles 65%, inventory 15%). These results show a larger percentage using these characterisations than that shown by Lovell *et al.* (2010, p. 22, intangibles 42%, inventory 8%) or Warwick and Ng (2012, p. 61, intangibles 55.3%, inventory 6.4%) but in both of these studies non-disclosure in relation to this issue was high, this being at least in part expected in the Lovell *et al.* study, given that (unlike in the current study) non-disclosing companies were not excluded from the sample (Lovell *et al.*, 2010, p. 22, non-disclosure rate of 27%; Warwick and Ng, 2012, p. 61, non-disclosure rate of 36.2%). Based on the limited result of nine firms using the inventory characterisation, no pattern can be discerned in relation to either sector or country location.

5.2 Valuation of Free Allocations

An issue that was raised in the discussions leading up to and following IFRIC 3 is the most appropriate valuation to be given to free allocations. In Phase II of the EU ETS, free allocations were a major feature of the scheme and at least 90% of allowances were provided for free under the country NAPs. The expectation would be that the adoption of a market value would be offset by a liability reflecting the gross value of the obligation by year end, thereby presenting a net liability overall. An alternative approach would be to record the allocations at nil value and only create a provision or expense when emissions exceed the allocation (a net liability approach). As it is the net figure that would ultimately impact the profit and loss (the net expense), either of these approaches would produce the same net result but clearly there is a marked difference in the amounts disclosed in the various financial statements.

The results shown in Table 4 differ somewhat from the earlier PWC survey but are broadly similar to the results of the other studies. In PWC (2007, p. 12) a high majority took the nil value approach (76%), whereas the balance adopted market/fair value (24%). An interesting feature of PWC (2007, p. 12) showed that some companies adopting market value then had an opposite entry for deferred income (14%) whilst others showed earned income (10%). In the current study, all those adopting the market value approach who also described the corresponding income entry relied on deferred income. In the case of Lovell *et al.* (2010, p. 23),

Table 4. Initial valuation of free allocations

Value	Frequency	Percent
Nil/nominal value	39	62.9%
Market value	19	30.6%
Other	1	1.6%
Not disclosed	3	4.8%
Total	62	100.0%

nil value was the most common approach (31%) and about half as many adopting a fair value approach (15%). These results were limited by a high number of 'other approaches' (31%) and non-disclosure (23%) (Lovell *et al.*, 2010, p. 23). Warwick and Ng (2012, p. 61) show a preference for nil value (38.3%) and a second preference for market value (21.3%) but also showed higher 'other' treatments (17%) and non-disclosure (23.4%).

A closer analysis of the data obtained by this study sought to determine if there was a pattern showing an association between the allocation characterisation and the initial valuation.

As shown in Table 5, in nearly all cases, the recognition of allowances in inventory corresponds to a nil value being shown, reflecting that the units have been allocated without payment. When those companies characterising allowances as intangibles are considered, the preference for nil value is still shown but is not as strong. For completeness, Table 5 shows the combined results for other treatments and non-disclosed treatments, again showing the nil value preference.

Subsequent to acquisition, the costs or carrying value of allowances may be affected by amortisation (in the case of intangibles), impairment reviews, and revaluation. Table 6 (top half) shows the frequency at which amortisation was disclosed.

Given that amortisation may be applied to intangibles but would not be relevant to inventory, the improved disclosure rate for the intangible classification is to be expected. The results show that there is an overwhelming preference that the cost of allowances not be amortised. This would be consistent with the view that amortisation is appropriate where the intangible asset has a limited life, thereby allowing for the recovery of costs over the period. In the case of allowances, they have an indefinite life and can be carried forward into Phase III of the EU ETS, therefore making it inappropriate to amortise their cost. In previous studies, a small proportion of companies did amortise allowances (PWC, 2007, p. 15, 14%; Lovell *et al.*, 2010, p. 24, 11.5%).[9]

In relation to both intangibles and inventory, it may be considered prudent to undertake impairment reviews to reflect any decline in market value. Unlike

Table 5. Initial valuation of free allocations (showing percentage of companies in the sample using each approach to asset characterisation)

	Inventory		Intangibles		Other	
Value	Frequency	Percent	Frequency	Percent	Frequency	Percent
Nil/nominal value	8	88.9%	25	58.1%	6	60%
Market value	1	11.1%	18	41.9%	1	10%
Other + not disclosed	0	0%	0	0%	3	30%
Total	9	100.0%	43	100.0%	10	100.0%

Table 6. Subsequence valuation of allowances: (a) Amortisation and (b) Impairment

	All: Frequency	All: Percent	Intangibles: Frequency	Intangibles: Percent
(a) Is amortisation adopted?				
Yes	0	0%	0	0%
No	24	38.7%	22	51.2%
Not disclosed	38	61.3%	21	48.8%
Total	62	100%	43	100%
(b) Are allowances subject to impairment reviews?				
Yes	33	53.2%	27	62.8%
No	1	1.6%	0	0%
Not disclosed	28	45.2%	16	37.2%
Total	62	100%	43	100%

many types of intangibles, this is possible for carbon emission allowances given the active carbon market in the EU. For the purposes of compiling the data that underlies Table 6 (bottom half), the coding for impairment took a broad approach and included any statements of policy in the accounts that indicated a consideration of the market value of allowances compared to the carrying cost and a reduction of that carrying amount to reflect any lower market value. The data show that of those companies that disclosed their treatment, nearly all undertook these reviews.

Throughout most of Phase II, there was downward pressure on allowance prices as a result of a number of factors including general lower industrial activity levels across Europe, leading to lower emissions and lower demand for allowances. PWC (2007, p. 16) and Lovell *et al.* (2010, p. 24) report disclosure of revaluation of allowances at lower levels (PWC 21%; Lovell *et al.* 46%) but do not specifically identify impairment reviews. Warwick and Ng (2012, p. 62) considered the subsequent valuation issue in relation to those companies that disclosed their approach to valuation of purchased allowances and found low levels of revaluation (only 7 of 47 disclosed some method of revaluation). In all studies, there were high levels of non-disclosure.

5.3 Treatment of Emission Liability

A focal point of the discussions to date regarding accounting for emission allowances has been on the appropriate method to reflect the liability under the EU ETS. Although there has been consensus that this liability accrues as the emissions are produced over the period, there has not been a common view with regard to its valuation. The IFRIC 3 approach advocated that the gross/total liability under the scheme be shown as a provision, where its value would reflect the number emission allowances required and the then current market price for such

allowances. This would effectively be offset by the value of the free allocations (but valued as at the time of receipt). In this study, the 'gross liability' approach includes the IFRIC 3 approach as well as other approaches where the provision reflects the total number of allowances required but may use a different valuation method, such as carrying value. An alternative approach advocated by many has been to only create a provision where the level of emissions exceeds the free allocation (the 'net liability' approach). Table 7 shows the results found from this sample based on this generalised approach to the liability.

One would expect that the approach taken to valuation of free allocations would impact the value of the liability. When the results shown in Table 7 were cross-checked with the treatment of the allocations shown in Table 4, a pattern does appear to emerge.

As can be seen in Table 8, of those companies that disclose a nil value approach to free allocations, in the majority of cases they also take the net liability approach to the provision (32 out of 39 or 82% of this sub-sample). This combined approach would mean that these items would not generally appear in a significant way in the accounts. Many companies commented in their accounts that they were in an excess allowance position for 2011 given the reduction in production. If they adopted nil valuation and had no net liability, there would be effectively nothing to report unless addition allowances had been purchased. In comparison, when a company adopted the market value approach for the free allocations, in most cases the gross liability approach followed (18 out of 20 or 90% of this sub-sample).

Another issue raised in the post-IFRIC 3 debate is whether it is more appropriate to determine the best estimate for the liability/provision under the EU ETS on the basis of the current market value of allowances required or the carrying value of allowances already held. Table 9 shows the measurement of the liability of the basis of the disclosures from the sample. For the purposes of these groupings, 'carrying value' encompasses the situation where the liability is based first on the carrying value of allowances already held (which may be nil for free allocations) plus reliance on market value where additional allowances would be required.

Aside from the preference for carrying value over market value, perhaps what is more striking is the frequency at which an 'other' method was adopted. This

Table 7. Valuation of emission liability

Valuation approach	Frequency	Percent
Gross	18	29.0%
Net	35	56.5%
Other	2	3.2%
Not disclosed	7	11.3%
Total	62	100.0%

Table 8. Value of free allocation and liability correspondence

Value of free allocation	Gross liability approach	Net liability approach	Other + non-disclosed	Total
Nil	0	32	7	39
Market	18	0	2	20
Other + not disclosed	0	3	0	3
Total	18	35	9	62

category included many cases where the financial statements disclosed that a provision was recorded but insufficient detail was provided to determine whether this relied on market values or carrying values. This should be contrasted to the 'not disclosed' category where the financial statements did not disclose any policy with respect to the liability. This result can be compared to Lovell *et al.* (2010, p. 25) who showed 19 out of 26 companies (73%) relying on carrying value and only 1 (4%) using market value to measure the liability. This is not dissimilar to PWC (2007, p. 19) that showed carrying value being the measuring basis in 73% of cases and market value only being used in 16% of cases. The most recent study, Warwick and Ng (2012, p. 63) is the most equivocal, identifying 11 different accounting methods for this valuation but when the methods are grouped into broader categories, a pronounced preference for market price is shown (in excess of 50%), which is not consistent with the other previous studies or the current one. Given the lack of consistency in results, this particular issue is one that could warrant further study.

By adopting an approach which measures the liability on the basis of allowances already held, one of the mismatches identified in the aftermath of IFRIC 3 is avoided. However, this approach assumes that the allowances held will be used to meet the liability, where it would be equally possible for the entity to purchase new allowances to meet the surrender obligation for the particular year. Given the option to carry-forward allowances from year to year and the likelihood that companies will engage in more active risk management with respect to carbon pricing in Phase III, these issues are more likely to grow in relevance.

Table 9. Measure of liability

Measurement method	Frequency	Percent
Market value	9	14.5%
Carrying value	30	48.4%
Other	16	25.8%
Not disclosed	7	11.3%
Total	62	100.0%

6. Conclusions

Although this study evidences that there continues to be diversity in approaches to accounting for carbon emission allowances and liabilities, three main approaches have been identified. These are described as a modified-IFRIC 3 approach, a netting approach, and an inventory approach. These approaches account for 72.6% of the sample, with the balance of companies adopting an alternative approach or a mix of approaches.

An approach based on showing only net assets and liabilities (a netting approach) is shown to have been adopted by 21 out of 62 companies (33.9%). This approach classified allowances as intangible assets but records free allocations at a nil value. Further, only the net liability for emissions (that level of emissions that exceeds the free allocation) is reflected. A majority of these companies (13 of the 21 or 61.9% of the sub-group) measure this liability based on the carrying value of allowances with only 5 out of 21 (23.8%) adopting market valuation (the other companies either adopted an approach that did not fit neatly within these approaches (three cases) or did not disclose their method of valuation or measurement (four cases)).

Of the sample of companies, 16 out of 62 (25.8%) adopt an approach broadly based on that recommended in IFRIC 3. This involved characterising allowances as intangibles, recognising the fair value of allocations on receipt (with corresponding deferred income), and subjecting the allowances to impairment reviews but this approach diverges from IFRIC 3 in the recognition of the (gross) liability for emissions, where 12 of the 16 companies are shown to measure this based on the carrying value of allowances held (four did not disclose), where IFRIC 3 recommended a market valuation approach.

A final approach identified with some frequency is based on classifying allowances as inventory (8 out of 62 or 12.9% of the sample). In every case, free allocations were given a nil value and in most cases the emission liability was reported as reflecting the net liability in excess of the allocation based on carrying value (six of eight or 75% of the sub-sample, with the other two not disclosing).

This analysis shows a far greater level of support for an IFRIC 3 style of approach than that shown in earlier studies and a growth in the reliance on an inventory characterisation of allowances but also shows a stark rejection of the market valuation measure for the emission liability in favour of a carrying value approach.

In addition to the continued lack of uniformity in approach, the results also show a lack of standardisation in reporting. One issue that has not been a focus of this study is the level of disclosure. The sample for this study only included those companies whose reports included some disclosure of emission allowance and liability accounting and even within this group there were several issues where disclosure levels were low. This could be the subject of further study.

It is suggested that with the commencement of Phase III of the EU ETS in 2013 and the move away from free allocations and lowering caps, many of these

accounting issues will be of greater significance. The diversity in accounting approaches adopted in relation to carbon emission allowances highlights the need for guidance and the IASB is encouraged to work with FASB with some urgency to resolve this uncertainty. Any solution will also need to take into account the likelihood that companies will increasingly be holding allowances as both trading assets and longer-term assets to meet emission liabilities.

Notes

[1]In addition to the EU, emissions trading systems are currently operating in Australia, New Zealand, the US state of California, the Canadian province of Quebec, and within regions of Japan whilst schemes are under development in the Republic of Korea and China. The Regional Greenhouse Gas Initiative also operates with respect to the power sector in nine east coast US states.

[2]The details of each EU Member State's corporate taxation regime will vary but a common starting point for establishing taxable profits across the EU is the company's accounting profits. See EC (2011). With regard to taxation, the taxation treatment of allowances was the subject of a detailed study published by Copenhagen Economics (2010).

[3]A significant source on the EU ETS is the European Community website, which includes not only access to the primary documents but also a discussion of the operation of the trading system. Available at http://ec.europa.eu/clima/policies/ets/index_en.htm. Academic commentary is also widely available. See, e.g. Ellerman *et al.* (2010).

[4]According to EC data, in Phase II, on average Germany had planned to auction 9% of the country allocation whilst the UK planned for 7% auctioning. Lower-scale auctioning had also been planned by the Netherlands, Austria, Ireland, and Hungary. See EC (2012).

[5]Phase III of the EU ETS will see the end to allocations to electricity generators except in limited circumstances, an overall reduction in allocations (reducing to 80% and being further reduced annually with a goal of 30% free allocation by 2020) and a shift in the determination of allocations to an EU-wide process based on carbon leakage criteria and benchmarks (EU, 2009). The initial list of sectors considered at risk of carbon leakage was agreed to at the EU level in late 2009 (EU, 2010).

[6]The revaluation model may be applied to emission allowances under the EU ETS as there is an active market whereby the fair value of allowances can be determined. IAS 38, para. 75.

[7]IFRS (2013). See also Meeting Summary, IASB/FASB September 2010, and Meeting Summary, IASB/FASB November 2010.

[8]In all but four cases, the 2011 annual financial reports were located. In those four cases, only the 2010 reports were available at the time that the study was undertaken so these reports were used. A list of the companies included in the sample is available upon request.

[9]The Warwick and Ng study did not address this issue.

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APPENDIX 1 – CODING SHEET

Questions and codes for responses

1. Where are (free) allocations initially recognised on the balance sheet?
    A. Inventory
    B. Intangible fixed assets
    C. Financial assets
    D. Other
    E. Not disclosed
2. At what value are (free) allocations initially recognised on the balance sheet?
    A. At nil/nominal value
    B. At market value with a corresponding entry for deferred income
    C. At market value with a corresponding entry for earned income
    D. Other
    E. Not disclosed
3. Where are purchased allowances initially recorded on the balance sheet?
    A. Inventory
    B. Intangible fixed assets
    C. Financial assets
    D. Other
    E. Not disclosed
4. Are allowances subsequently amortised/depreciated?
    A. Yes
    B. No
    C. Not disclosed

5. Are allowances subject to impairment reviews?

    A. Yes

    B. No

    C. Not disclosed

6. Are allowances revalued (upwards)?

    A. Yes, to equity/reserves

    B. Yes, to income

    C. No

    D. Not disclosed

7. How is the emissions liability recognised?

    A. Gross liability based on current market value of allowances

    B. Gross liability based on carrying value of purchased allowances and balance based on current market value

    C. Gross liability based on carrying value of purchased allowances, contract price under forward contacts and balance based on current market value

    D. Net/excess liability over (free) allocation based on current market value of allowances

    E. Net/excess liability over (free) allocation based on carrying value of purchased allowances and balance based on current market value

    F. Net/excess liability over (free) allocation based on carrying value of purchased allowances, contract price under forward contracts and balance based on current market value

    G. Other

    H. Not disclosed

8. Do the accounts include comments regarding hedging or allowance trading activities?

    A. Yes

    B. No

APPENDIX 2 – ENTITY LIST

Entity Name	***Location of Headquarters***
Abengoa, SA	Spain
Acerinox, SA	Spain
Alpiq Holding Ltd	Switzerland
ArcelorMittal, SA	Luxemburg
BASF, SE	Germany
Cementos Molins, SA	Spain
Cementos Portland Valderrivas, SA	Spain
Centrica plc	UK
CEPSA (Compania Espanola de Petroleos, SAU)	Spain
Ciech, SA	Poland
Cimpor (Cimentos de Portugal)	Portugal
Drax Group plc	UK
Drewag	Germany
Royal DSM	Netherlands
Dyckerhoff GmbH	Germany
E.ON, SE	Germany
EDF Group	France
Electricity Supply Board (Ireland)	UK
Enagas SA	Spain
EnBW AG	Germany
Ence	Spain
Endesa, S A/Enel SpA	Italy

Europac Group (Papeles y Cartones de Europa, SA)	Spain
Fortum Oyj	Finland
Gas Natural Fenosa (Gas Natural SDG, SA)	Spain
GDF Suez, SA	France
HC Energia (part of EDP Group)	Spain
Heidelberg Druckmaschinen AG	Germany
Holcim	Switzerland
Holmen AB	Sweden
Iberdrola, SA	Spain
Iberpapel Gestion, SA	Spain
International Power plc	UK
Italcementi SpA	Italy
K + S, AG	Germany
Lafarge	France
Lecta	Luxemburg
Linzing, AG	Austria
Mayr-Melnhof Karton, AG	Austria
MVV Energie, AG	Germany
National Grid plc	UK
OMV AG	Austria
OXEA (since 2013 part of Oman Oil Company)	Luxemburg
Petroplus Holdings AG (now defunct)	Switzerland
Repsol SA	Spain
RWE AG	Germany

Saint-Gobain SA	France
Salzgitter AG	Germany
SCA (Svenska Cellulosa Aktiebolaget)	Sweden
Scottish & Southern Energy plc	UK
Smurfit Kappa	Ireland
Solvay SA	Belgium
Statkraft	Norway
Stora Enso Oyj	Finland
Sudzucker AG	Germany
Total SA	France
UPM-Kymmene Corporation	Finland
Vattenfall	Sweden
Veolia Environnement SA	France
Vidrala SA	Spain
Wacker Chemie AG	Germany
Wienerberger AG	Austria

CHAPTER THREE: DOMESTIC TAXATION OF EMISSIONS TRADING TRANSACTIONS

INTRODUCTION TO PAPER 2

As previously stated, the premise of this thesis is that differences in the income tax treatment of transactions involving carbon emission permits across jurisdictions have the potential to undermine the efficiency of carbon markets that are linked. These distortions in the carbon market due to the operation of inconsistent tax systems have been conceptualised by Kane[1] as effects that violate inter-firm neutrality, that is, situations where firms are not treated in the same manner for tax purposes in relation to identical carbon trading transactions. In order to determine whether such differences in tax treatment exist, as well as the potential impact of such differences, the domestic tax laws of Australia and the United Kingdom have been selected for analysis based on work that had been undertaken to link Australia's Carbon Pricing Mechanism (CPM) and the European Union Emissions Trading System (EU ETS), in which the UK participates. Although this link was abandoned with the repeal of the CPM in 2014,[2] the analysis has continued relevance as it illustrates the inconsistencies in tax treatment that can arise where one jurisdiction bases its determination of taxable income on accounting profits (the UK) and another develops specific tax rules to deal with the unique issues raised by carbon trading (Australia). It is also considered that Australia's approach to the taxation of these transactions, being the most sophisticated to date, may be used as a model for other jurisdictions that have not yet addressed these tax issues and, therefore, a full appreciation of the consequences of such an approach warrants examination.

[1] Mitchell Kane, 'Taxation and multi-period global cap and trade' (2011) 19 *NYU Environmental Law Journal* 87.
[2] *Clean Energy Legislation (Carbon Tax Repeal) Act 2014* (Cth).

The tax treatment of emission permit transactions in the UK commences with accounting profits, adjusted, it is argued, by the application of the intangible fixed asset regime of the *Corporation Tax Act 2009* (UK). Paper 1 identifies the three more common approaches to accounting for these transactions in compliance with IASB standards. This paper builds upon those conclusions by using the two most popular accounting approaches, both which characterise emission permits as intangible assets, as a starting point for the analysis of the UK tax outcomes.

Paper 2 adopts a legal doctrinal research approach to analyse the carbon pricing legislation in Australia and the UK and the relevant European Parliament Directives in order to identify the common emissions trading scheme features that would give rise to material tax consequences, such as free allocations and a compliance timeline that spans more than one tax period. This doctrinal approach is then applied to the taxation law of the two jurisdictions to identify the relevant provisions and analyse the effects of their application. A comparative approach then evaluates the two sets of tax outcomes for inconsistencies and offers a view of a preferred approach. The scope of this paper is limited to domestic transactions and the analysis is extended to cross-border transactions in Paper 3. Put in the terms of testing for inter-firm neutrality in relation to firms operating under the Australian scheme and the EU ETS, one important finding from Paper 2 is that the Australian tax rules that have been designed to address emission permits apply consistently to all holders of permits on the Australian registry and should therefore produce like tax outcomes for all such holders whereas the UK tax rules, which rely heavily on accounting practice that is (as evidenced by the findings in Paper 1) still unsettled, are likely to produce different tax outcomes for EU ETS participants depending on the approach taken in their financial accounts. This alone could lead to a violation of inter-firm neutrality.

A more obvious issue giving rise to diversity in tax treatment across firms is in relation to the timing of the compliance expense. Due to reliance on accounting practice, the UK tax laws reflect the compliance expense on an accruals basis in the compliance year whereas under the specific Australian tax rules the deduction for this expense is only allowed in the following year, when the permits are surrendered. This is illustrative of the 'key margin' of time identified by Kane along which taxation can distort economic behaviour.[3] By deferring the tax deduction to the following year, the Australian approach effectively makes it more expensive to comply compared to firms operating under the EU ETS and the UK tax system.

In relation to the treatment of free allocations, the analysis presented in Paper 2 evidences significant disparity in tax treatment than can lead to a lack of inter-firm neutrality. The accounting approaches identified in Paper 1 can feed through into UK tax treatment (as shown in Paper 2) to produce one of two extreme results, immediate recognition of the value of the free permits or indefinite deferral of the same, whilst the Australian tax approach results in a third middle ground, temporary deferral. The two tax systems also produce differences in the treatment of accrued changes in value, as the Australian system allows for an annual mark-to-market basis whilst the UK tax system recognises the write-down of intangibles but relies on a realisation basis to recognise increases in value.

Paper 2 was published in the *British Tax Review*[4] in late 2013 and is presented here in the form in which it was published: (2013) 3 *British Tax Review* 299-320. As the readership of the *Review* would have been unlikely to have read Paper 1, this paper contains a summary of the accounting issues and the conclusions of Paper 1. As such, there is a degree of repetition in that section. It should also be noted that the term 'emission allowances' is used

[3] Kane, above n 1, 87.
[4] *British Tax Review* is an international scholarly tax law journal published by Sweet & Maxwell.

rather than ‘emission permits’ throughout the paper since this is the preferred terminology under the EU ETS.

It should be noted that since Paper 2 was published in late 2013, before the repeal of the CPM, the paper discusses the scheme as if it were still operational. Australia’s CPM proved to be short-lived. The first compliance period under the scheme commenced on 1 July 2012 but, with a change in government in late 2013, the scheme was repealed by way of a package of eight Acts with effect from 17 July 2014, such that no new liabilities accrued from 1 July 2014.[5] Although the mandatory carbon price by way of the CPM has ceased, the voluntary offset regime for land-based reduction and sequestration activities (the Carbon Farming Initiative) has continued to operate as part of the Emissions Reduction Fund, the Government’s replacement for the CPM that commenced in 2014.[6] As a consequence, many of the income tax provisions related to emission units were maintained as they will still apply to Australian carbon credit units (ACCUs) issued under the Emissions Reduction Fund and emission units issued under the Kyoto Protocol, with only minor amendments to remove references to carbon units under the CPM and prescribed international units (a term that was relevant when scheme linking was in prospect). The details on the workings of the Emissions Reduction Fund can be found in the online materials made available by the Clean Energy Regulator, the government department responsible for this and other environmental policy instruments.[7] The Fund is available for a wide range of activities so as to provide opportunities for industry as well as the land sector to participate. Potential participants who are willing to undertake a project under a prescribed method submit an auction bid and if that bid is accepted by the Government, the resulting contract commits the Clean Energy Regulator to purchase, and the project proponent agrees to sell, the nominated number of

[5] The main Act effecting the repeal was the *Clean Energy Legislation (Carbon Tax Repeal) Act 2014* (Cth).
[6] The Emissions Reduction Fund was established by amending the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth). *Carbon Farming Initiative Amendment Act 2014* (Cth).
[7] See <www.cleanenergyregulator.gov.au/EFR>.

ACCUs at the contracted price. Any excess ACCUs produced by the project may be sold to other market participants, where demand may flow from other participants who experience a short-fall in ACCUs. When a required periodic report is accepted, the ACCUs will be issued and then immediately sold to the Government at the contract price. A 'safeguard mechanism' designed to safeguard emissions reductions is due to come into effect on 1 July 2016.[8] Facilities with covered emissions above the threshold will be subject to a baseline (set by the regulator) and, if this baseline is exceeded, the facility will be required to surrender ACCUs to offset these emissions. The accounting and tax rules will therefore have renewed relevance once this safeguard mechanism begins to operate.

[8] The legislative authority for the development of the mechanism is found in amendments to the *National Greenhouse and Energy Reporting Act 2007* (Cth). Most of the details of the mechanism can be found in National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth).

Approaches to the Taxation Treatment of Carbon Emission Allowances and Liabilities: Comparing the UK and Australia

Celeste M. Black[*]

With the development of emissions trading schemes as a policy instrument to combat climate change and the growing interest in linking complementary schemes, the taxation consequences of transactions involving emission allowances are increasingly important. With the purpose of highlighting the strengths and weaknesses of approaches that have developed to date, this article analyses the tax treatment of relevant transactions under the UK Corporation Tax, which takes accounting profits as the starting point, and compares that to the legislatively prescribed approach that has been developed in Australia. The emphasis is on three main issues: the treatment of free allocations; the recognition of emission liabilities; and the asset characterisation of allowances. The potential consequences of the differences in tax treatment are illustrated.

Introduction

Climate change is a global challenge demanding an international response. Under the auspices of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, the use of emissions trading is nominated as one mechanism by which its Parties may meet their commitments to reduce harmful emissions.[1] In order to provide a global response, it is envisioned that emissions trading schemes will ultimately be linked to provide a uniform price for carbon and therefore the most cost-effective reductions in emissions across jurisdictions. As highlighted in the 2010 report by Copenhagen Economics, any differences in the taxation treatment of transactions entered into in connection with such schemes have the potential to distort this price signal and therefore undermine the effectiveness of the schemes.[2] The Copenhagen Economics report focuses its attention on taxation differences within EU Member States but, with the establishment of carbon trading markets in a number of other jurisdictions and the potential to link these markets, it is timely to extend this consideration across trading schemes.[3]

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[1] UNFCCC (1997) Kyoto Protocol to the United Nations Framework Convention on Climate Change. Adopted by consensus at the Third Session of the Conference of the Parties (COP3), Arts 3 and 17, available at: *http://unfccc.int/kyoto_protocol/items/2830.php* [Accessed June 11, 2013].

[2] S. Næss-Schmidt, U. Møller, E.S. Hansen and J. Tops, *Tax treatment of ETS allowances: Options for improving transparency and efficiency* (Copenhagen: Copenhagen Economics, 2010), 5–6, 9.

[3] For example, an emissions trading scheme has been operating in New Zealand since 2008, with broad application from 2010, Australia's scheme commenced on July 1, 2012, California's cap-and-trade programme applies to emissions from January 1, 2013, and the Government of South Korea has recently legislated to commence an emissions trading scheme from 2015. The Chinese Government has indicated a general interest in developing carbon markets but details have yet to be developed. Australian Government, Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, *Climate Change: Countries Acting Now* (2012), available at: *http://www*

In August 2012, in the wake of the commencement of Australia's Carbon Pricing Mechanism (CPM) in July, the European Commission and the Australian Government announced an agreement link between the European Union Emissions Trading System (EU ETS) and Australia's CPM. From July 1, 2015, Australian liable entities will be allowed to use EU ETS allowances to meet up to 50 per cent of their liabilities under Australia's CPM (where this cap will apply at least until 2020) and full two-way linkage is expected by 2018.[4]

The argument in support of the linking of schemes is based on an extension of the efficiency arguments that support ETSs generally: by maximising the number of participants (both installations and investors/traders) and therefore the liquidity in the carbon market, global emissions will be reduced in the most cost efficient way.[5] Decisions are made at the installation level whether to engage in abatement activities or to use emissions allowances to meet ETS compliance obligations, where such judgements involve a comparison of the installation's marginal cost of abatement and the marginal cost of polluting (the carbon price). When compatible ETSs are linked, trading will produce one carbon price across the schemes.

In light of the move towards linking, a comparative analysis of the taxation treatment of ETS transactions is valuable for two reasons. From a tax law design perspective, an examination of the consequences flowing from different approaches to the taxation of these transactions may inform policy makers in determining whether specific legislation is preferable. Additionally, differences in the taxation treatment of ETS transactions could result in differences in the effective carbon price, where this may to some extent undermine the efficiency gains otherwise achieved by linking. A comparison of the taxation treatment in the UK with that in Australia is particularly valuable to both of these considerations. From the design perspective, Australia is unique in that it has adopted specific and comprehensive taxation legislation in relation to emission allowances.[6]

.climatechange.gov.au/international/actions/countries-acting-now [Accessed June 11, 2013]. J. Lewis, *Energy and Climate Goals of China's 12th Five-Year Plan* (Center for Climate and Energy Solutions, 2011).

[4] The Australian Minister for Climate Change and Energy Efficiency, the Hon. Greg Combet MP, and the European Commissioner for Climate Action, Ms Connie Hedegaard, "Australia and European Commission agree on pathway towards fully linking Emissions Trading systems" (Joint Press Release, Europa Press Releases. Reference: IP/12/916 Event Date: August 28, 2012), available at: *http://europa.eu/rapid/press-release_IP-12-916_en.htm* [Accessed June 11, 2013]. The Australian Parliament has enacted legislation to set up the mechanisms necessary for linking. See Clean Energy Amendment (International Emissions Trading and Other Measures) Act 2012 (Australia) amending the Clean Energy Act 2011 (Australia) (under which Australia's CPM is established) and the Australian National Registry of Emissions Units Act 2011 (Australia).

[5] It is outside the scope of this article to consider the economic arguments in support of and against the use of emissions trading as a policy mechanism to reduce carbon emissions. The most widely known and influential report considering these issues is N. Stern, Cabinet Office—HM Treasury, *The Economics of Climate Change. The Stern Review* (Cambridge: CUP, 2007). For an Australian perspective see R. Garnaut, *The Garnaut Climate Change Review* (Cambridge: CUP, 2008) and R. Garnaut, *The Garnaut Review 2011: Australia in the Global Response to Climate Change* (Cambridge: CUP, 2011). This article presumes that the policy decision has been made to adopt this mechanism and to pursue linking. For a discussion of the economic efficiency arguments in support of linking see, e.g. K. Neuhoff, *Climate Policy after Copenhagen: The Role of Carbon Pricing* (Cambridge: CUP, 2011), 143, and J. Bazelmans, "Linking the EU ETS to other emissions trading schemes" in M. Faure and M. Peeters (eds), *Climate Change and European Emissions Trading: Lessons for Theory and Practice* (Cheltenham: Edward Elgar Publishing Ltd, 2008), 297.

[6] With the establishment of an emissions trading scheme in New Zealand from 2008, a number of amendments to the Income Tax Act (ITA) 2007 (NZ) have been enacted to operate alongside ordinary tax principles. This differs to the approach taken in Australia where the new statutory rules are designed to apply to all transactions involving registered

In contrast, in the UK, as in most EU Member States, the corporate tax base is derived from financial accounting profits and no tax rules specific to emissions trading have been adopted. This may still produce a degree of uniformity as the consolidated financial statements of companies listed in EU stock markets must adopt those international accounting standards that have been endorsed by the European Commission[7] but, to date, there is no generally accepted accounting treatment with respect to emission allowances. As a participant in the EU ETS, the UK is also a relevant subject of analysis when considering the efficiency issues raised by the linking agreement with Australia's CPM.

As is outlined below, the commonality of basic design features of the EU ETS and Australia's CPM give rise to common domestic taxation considerations. For the purpose of this article, three significant tax issues have been identified: the treatment of free allocations of allowances; the recognition of liabilities under the ETS; and the treatment of allowances held by entities, including allowances purchased by companies with compliance obligations and allowances held by investors (financial institutions and traders).[8] The tax consequences of these transactions when arising in the UK and Australia will be compared and contrasted. This article commences with a brief overview of the two trading schemes in order to highlight those common design features that give rise to the common tax issues which are identified. Given the reliance on financial accounts as the starting point for many corporation tax regimes in the EU, including the UK Corporation Tax, a brief discussion of the current state of international accounting standards in this regard is included. The contrast is then drawn between the consequences under the UK Corporation Tax and the Australian income tax of scheme transactions.

A comparison of the carbon trading regimes

This section highlights the common design features of the EU ETS and Australia's CPM that are relevant for an analysis of the taxation consequences of scheme transactions. This section is

emissions units and the new rules generally operate to the exclusion of other provisions of the Income Tax Assessment Act 1997 (Australia).

[7] European Community, *Report on the responses received to the Consultation of Accounting Regulatory Committee*European Commission *Report on the Responses Received to the Consultation of Accounting Regulatory Committee Members on the Use of Options within the Accounting Directives* (the Internal Market and Services Directorate-General, September 2011), responses to question 8 (Are corporate/income taxes calculated by reference to profits in financial statements?), 15–16. There has been a move towards greater uniformity in accounting standards based on the adoption of internationally accepted standards for consolidated financial statements throughout the EU. Regulation (EC) No.1606/2002 of the European Parliament and of the Council on the application of international accounting standards (July 19, 2002), requiring the use of International Accounting Standards in the preparation of consolidate accounts for EU listed companies from 2005. Standards must be endorsed by the European Commission before they are binding. Nearly all International Accounting Standards that were already issued as at September 29, 2003 were endorsed on that date and the endorsement program continues as new standards and interpretations are issued. A complete list of endorse standards is available through the European Financial Reporting Advisory Group.

[8] The focus here is somewhat narrower than the approach taken in the Copenhagen Economics report, which identified five issues for tax. That study included the treatment of offsets (allowances generated by way of the Clean Development Mechanism and Joint Implementation projects) and the treatment of penalties for non-compliance. Næss-Schmidt, Møller, Hansen and Tops, above fn.2, 23.

not designed to provide a comprehensive description of the details of the two schemes, where this level of detail is outside of the scope of this article and may be obtained elsewhere.[9]

Legal framework

As an early signatory to the Kyoto Protocol, the EU had an overall commitment to an emissions reduction target of 8 per cent of 1990 levels by 2008–2012 (the first commitment period) and, by virtue of the burden sharing agreement, this translated to an obligation on the part of the UK to an emissions reduction of 12.5 per cent below 1990 levels.[10] The second commitment period (2013–2020) established by the Doha Amendment to the Kyoto Protocol will see continuing international commitments to emission reductions. The UK Government has also set an ambitious target of an 80 per cent reduction by 2050.[11] One of the key policy instruments of the EU, and the UK, in seeking to meet these goals, in line with the Kyoto mechanisms, is the EU ETS, which now includes the 27 EU countries as well as Croatia, Iceland, Liechtenstein and Norway.[12] Phase II of the EU ETS (2008–2012) saw the introduction of auctioning and Phase III, running from 2013–2020, will see a significant reduction in the proportion of free allocations.[13] The mechanisms for the operation emissions trading in the UK are established by way of regulation.[14]

Even prior to ratification of the Kyoto Protocol in late 2007, successive Australian governments have pursued the establishment of an ETS as a mechanism to support the country's transition to a low emissions economy. With effect from July 1, 2012, a carbon price applies to emissions by virtue of Australia's CPM, which was introduced as part of an extensive package of measures

[9] For a detailed consideration of the EU ETS see A.D. Ellerman, F.J. Convery and C. de Perthuis, *Pricing Carbon: The European Union Emissions Trading Scheme* (Cambridge: CUP, 2010). For a general overview of Australia's Clean Energy Package see M. Wilcox and M. Rennie, *Australian Emissions Trading Law* (Sydney: Thomson Reuters, 2012).

[10] UNFCCC, Agreement between the European Community and its Member States under Article 4 of the Kyoto Protocol, FCCC/CP/2002/2 (June 12, 2002), Annex II.

[11] Climate Change Act 2008.

[12] The EU ETS was established by virtue of the EU Emissions Trading Directive as amended by the Linking Directive. Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (October 13, 2003) (Trading Directive). Directive 2004/101/EC of the European Parliament and of the Council amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms (October 27, 2004) (Linking Directive). Phase I (2005–2007) was effectively a trial phase given that the EU-wide verified emissions for the period were nearly 500 $MtCO_2$ less than the cap and only four Member States, including the UK, exceeded their national allocations. National Audit Office, *Briefing for the Environmental Audit Committee—European Union Emissions Trading Scheme: A review by the National Audit Office* (March 2009) (*NAO Review of the EU ETS*), available at: *http://www.nao.org.uk/publications/0809/eu_emissions_trading_scheme.aspx* [Accessed June 11, 2013]. Phase II ran from 2008–2012, corresponding to the first Kyoto commitment period. In this phase, up to 10% of national allocations could be auctioned. Trading Directive Art.10.

[13] Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (April 23, 2009) (the Phase III Directive). See also *NAO Review of the EU ETS*, above fn.12, 56–57.

[14] Greenhouse Gas Emissions Trading Scheme Regulations 2012 (SI 2012/3038) replacing Greenhouse Gas Emissions Trading Scheme Regulations 2005 (SI 2005/925) (as amended) (establishing emitter liabilities and free allocation of allowances); Treasury, The Community Emissions Trading Scheme (Auctioning of Allowances) (No.2) Scheme 2009 (establishing the auctioning process).

referred to as the Clean Energy Plan.[15] Australia's CPM is a cap-and-trade scheme that will operate in two distinct phases or periods and the allowances issued by the Australian Government under the plan are referred to as Australian Emissions Units. The first stage (2012–2015) establishes a fixed price[16] for allowances and therefore operates much like a carbon tax. This first phase is referred to as the fixed charge period. In the second stage, the scheme will transition to flexible, market determined pricing and auctioning; this is known as the flexible charge period.

Scheme coverage and the role of free allocations

The EU ETS is a cap-and-trade scheme that covers emissions of carbon dioxide (CO_2) by installations involved in electricity generation as well as specified energy-intensive industries, including the production and processing of ferrous metals, certain mineral industries (such as the production of cement clinker and lime as well as glass and ceramic products), and industrial pulp and paper production.[17] In total, it is estimated that the ETS covers 48 per cent of the UK's CO_2 emissions[18] and of the total of these covered emissions, 71 per cent are produced by the power sector.[19] The EU ETS initially only covered emissions of CO_2 but was expanded to nitrous oxide and perfluorocarbons produced by specified industrial processes with the commencement of Phase III.[20] In addition, since 2012, emissions from aviation have been included in the scheme, though the enforcement of these rules in relation to international aviation has been deferred pending an international agreement to address these emissions.[21]

A critical feature of the EU ETS, in both Phases I and II, has been the role of free allocations of allowances. Member States had the power to auction up to 10 per cent of allowances in Phase II so at least 90 per cent were provided for free by way of the various National Allocation Plans, where the principle behind these allocations has been grandfathering.[22] In practice, auctioning

[15] Australian Government, *Securing a clean energy future: The Australian Government's climate change plan* (2011). A package of 13 bills was introduced to Parliament in September 2011 and all elements were passed in November 2011. The main elements of the Carbon Pricing Mechanism are established by the Clean Energy Act 2011 (Australia).
[16] The fixed price is initially set at AUD $23 for the 2012/13 year and will rise by 2.5% in real terms in each of the two following years. Clean Energy Act 2011 s.100(1).
[17] The full list of covered activities can be found in Annex I to the Trading Directive, above fn.12.
[18] Department of Energy and Climate Change, *EU Emissions Trading System* (2012), available at: *https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/eu-emissions-trading-system-eu-ets* [Accessed June 11, 2013].
[19] *NAO Review of the EU ETS*, above fn.12, 37.
[20] Trading Directive, above fn.12, Art.3. Although Annex II defines "greenhouse gases" broadly, for the purposes of obligations to surrender allowances in respect of emissions, only emissions of CO_2 are specified in Annex I to the Trading Directive, above fn.12. Pursuant to Art.24, Member States may extend the scheme to additional activities or greenhouse gases. The Phase III Directive replaces the Annex I list but only extends the covered gases to include nitrous oxide and certain perflourocarbons.
[21] Directive 2008/101/EC of the European Parliament and of the Council of November 19, 2008 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community (November 19, 2008).
[22] The power to formulate the National Allocation Plan (NAP) for the UK is provided to the Secretary of State by way of Pt 3 of the Greenhouse Gas Regulations. Allocations are provided on an installation level and the NAP as a whole must be approved by the European Commission. The NAPs for Phase II may be accessed via the European Commission website, at: *http://ec.europa.eu/clima/policies/ets/pre2013/nap/index_en.htm* [Accessed June 11, 2013].

was at much lower levels during Phase II, with only the UK and Germany conducting large scale auctions.[23]

Under the Trading Directive, as amended, in Phase III a new set of criteria for free allocations applies, based largely on benchmarking against greenhouse gas performance for the particular product and national implementation measures replace National Allocation Plans.[24] Installations may also be entitled to free allowances on the basis that the sector is exposed to significant carbon leakage.[25]

Importantly, allocations to electricity generators are to be phased out entirely. Phase III will see a significant reduction in the proportion of free allocations as an estimated 50 per cent of allowances will be auctioned, working towards a complete phase out of free permits by 2027 (the power sector phase out is to be complete by 2020).[26]

Australia's CPM applies more broadly than the EU ETS from its commencement, both in terms of covered activities and covered gases, extending beyond carbon dioxide.[27] The mechanism applies to stationary energy and industrial processes as well as emissions from certain landfill facilities and fugitive emissions from mining activities.[28] Agriculture and other land uses are not covered by the scheme but instead an offsets regime, called the Carbon Farming Initiative, provides incentives to reduce emissions and engage in carbon sequestration activities. A minimum threshold of CO_2-equivalent emissions level has the effect of capturing an estimated 500 polluters in the scheme and around 60 per cent of Australia's emissions.[29]

[23] Details of auctioning during Phase II can be found on the EC Climate Action website, at: *http://ec.europa.eu/clima/policies/ets/auctioning/second/index_en.htm* [Accessed June 11, 2013].

[24] Trading Directive as amended by the Phase III Directive inserting new Art.10a. See also European Commission, Commission Decision determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council (April 27, 2011) (2011/278/EU).

[25] The list of at-risk sectors is provided in the Commission Decision determining, pursuant to Directive 2003/87/EC of the European Parliament and of the Council, a list of sectors and subsectors which are deemed to be exposed to a significant risk of carbon leakage (December 24, 2009) (2010/2/EU).

[26] *NAO Review of the EU ETS*, above fn.12, 56–57.

[27] For the purposes of Australia's CPM, the term "greenhouse gases" means carbon dioxide, methane, nitrous oxide, sulphur hexafluoride and hydrocarbons and perfluorocarbons as specified under the National Greenhouse and Energy Reporting Act 2007 (Australia) (which established the national emissions reporting system with effect from July 1, 2008). However, synthetic greenhouse gases are then excluded unless produced during aluminium production, where these gases are subject to an equivalent price through adjustments to import and manufacturing levies. Transport fuels are also excluded from Australia's CPM but subject to a carbon price by way of adjustment to the fuel tax levy systems.

[28] For an entity to be liable under Australia's CPM, it must have operational control of a facility where there is an obligation to report under the National Greenhouse and Energy Reporting Scheme. One prerequisite for a reporting obligation is the existence of an approved method for measurement of emissions. These methods are made under the National Greenhouse and Energy Reporting Act 2007 s.10(3) as the National Greenhouse and Energy Reporting (Measurement) Determination 2008 (as amended) and cover, inter alia, fuel combustion and various industrial processes.

[29] An emissions liability will generally only apply to facilities that have direct emissions of 25,000 tonnes of CO_2-e per year or more. Clean Energy Act 2011 s.20(4). However, large natural gas consuming facilities and certain landfills are potentially liable at a lower threshold. The figures of 500 liable entities and 60% of emissions were put forward by the Australian Government in the Explanatory Memorandum that accompanied the Clean Energy Bill 2011 (Australia). The Clean Energy Regulator is required to publish the list of entities that it has identified as likely to be liable under Australia's CPM. The most recent list was released in April 2013 and included 377 entities. See the *Liable Entities Public Information Database*, available on the Clean Energy Regulator website, at: *http://www*

Like the EU ETS, free allocation mechanisms are a dominant feature of Australia's CPM. Allocations will be made on a limited, transition basis to operators of coal-fire electricity generators over four years from 2013/14.[30] More importantly, significant and ongoing allocations will be made to emissions-intensive, trade-exposed sectors to preserve the international competiveness of Australian industry.[31] In the fixed charge period, there is no cap on the number of allowances issued and the Regulator issues allowances (referred to as units in the legislation) upon application and payment of the fixed charge.[32] These units are automatically surrendered upon issue and therefore would only be purchased by entities with a compliance liability.

In the flexible charge period from July 1, 2015, an emissions cap will operate and all units in excess of those required for free allocations will be auctioned.[33] In the first three years of this period, a price ceiling will operate. In addition, the Australian scheme will allow the surrender of Kyoto units as well as allowances issued under the EU ETS to meet compliance obligations, up to a maximum of 50 per cent of the liability, and the intention is that there will be full, two-way linking between the schemes from 2018.

Both the EU ETS and Australia's CPM will provide ongoing significant support to sectors, in particular trade-exposed sectors, by way of allocations well beyond the commencement of linking in 2015. The tax consequences of the receipt of free allocations of allowances will therefore continue to be important. It is also evident that both schemes rely on the development of a liquid secondary market for allowance trading in order to achieve the goal of lowest cost abatement. It is relevant, from a tax perspective, to also consider the treatment of trading, by both compliance holders and investors and short-term traders.[34]

Compliance timelines

The UK scheme now operates by way of the Greenhouse Gas Emissions Trading Scheme Regulations 2012 (the Regulations). As a preliminary matter, in accordance with the Trading

.cleanenergyregulator.gov.au/Carbon-Pricing-Mechanism/Liable-Entities-Public-Information-Database/LEPID-for-2012-13-Financial-year/Pages/default.aspx [Accessed June 11, 2013].

[30] Clean Energy Act 2011 Pt 8.

[31] This program, known as the Jobs and Competitiveness Program, is enacted by the Clean Energy Act 2011 Pt 7. The details of the program are to be determined by Government by way of detailed regulations. Regulations issued in February 2012 identify eligible activities, rates of assistance, and allocative baselines. Clean Energy Regulations 2011 (Australia) Sch.1 (as amended).

[32] Clean Energy Act 2011 Pt 4, Div.2.

[33] Clean Energy Act 2011 Pt 4, Div.4. The number of allowances available for auction will depend on the pollution cap, allowances earmarked for industry assistance and any relinquishments. The Australian Government has committed to announcing the caps for the first five years in May 2014. See Climate Strategy and Markets Division, Department of Climate Change and Energy Efficiency, Australian Government, *Auctions: Position paper on the legislative instrument for auctioning carbon units in Australia's carbon pricing mechanism* (February 2012), available at: *http://www.climatechange.gov.au/position-paper-legislative-instrument-auctioning-carbon-units-australia%E2%80%99s-carbon-pricing-mechanism* [Accessed June 11, 2013].

[34] It is considered that of equal importance is the development of futures markets for allowances as a means of managing the risk of volatile market prices. Such forward contracts and options with respect to allowances are considered to be taxable on the same basis as other futures contracts. The extent to which the tax treatment of allowance futures can have an impact on the efficiency of linked ETSs is outside the scope of this article and could be the subject of further investigation.

Directive,[35] an entity must obtain a greenhouse gas emissions permit before carrying on an activity specified in Annex 1 to the Directive as a Schedule 1 activity under the Regulations.[36]

Compliance works on a calendar year basis. Allocations for a given year are to be made by February 28 of the current year. The emissions report for the year ended December 31 must be submitted by March 31 of the following year and allowances must be surrendered by April 30.[37] The overlap of the compliance years allows a given year's allocation to be used to meet the compliance obligation for the previous year.

A similar compliance timeline applies in Australia but is based on a year ended June 30th. Since 2007, large emitters have been required to measure and annually report their emissions under the National Greenhouse and Energy Reporting Scheme.[38] For a reporting year from July 1 to June 30, a report is due on the following October 31. This timeline has been retained under Australia's CPM. Free allocations are provided early in the compliance period[39] and the requisite surrender of allowances is not required until February 1 of the following year.[40] A slightly different timeline applies in the fixed charge years due to an interim surrender obligation.[41]

Both of these compliance timelines produce a mismatch between the accruing obligation under the scheme, which is based on emissions produced by the activities during the compliance period, and the obligation to surrender the requisite allowances, where this is not required until the following year. The tax treatment of the liability is notably different between the two jurisdictions under consideration and this is explored more fully below.

Linking to create international markets

In accordance with the Linking Directive, the UK Regulations currently provide for the use of certain Kyoto protocol units, specifically Certified Emission Reductions (CERs) and Emission Reduction Units (ERUs), in addition to EU ETS allowances to meet surrender obligations up to the limit given in the national allocation plan.[42] The UK National Allocation Plan (UK NAP) for Phase II set a limit equal to 9.3 per cent of its free allocation for large electricity producers and

[35] Trading Directive, above fn.12, Arts 4–6.
[36] Joint publication of the Scottish Environment Protection Agency, Northern Ireland Environment Agency, Department of Energy and Climate Change (UK) and Environment Agency (UK), *European Union Emissions Trading System (EU ETS) Phase III: Guidance for Installations—How to comply with the EU ETS and Small Emitter and Hospital Opt-Out Scheme* (2013) (*Compliance Guide*), 7, available at: *http://www.environment-agency.gov.uk/business/topics/pollution/141021.aspx* [Accessed June 20, 2013].
[37] *Compliance Guide*, above fn.36, 13.
[38] See *Liable Entities Public Information Database*, above fn.29.
[39] Clean Energy Regulations 2011 (Australia) Sch.1, cl.902.
[40] Clean Energy Act 2011 s.133.
[41] During the fixed charge period, liable entities face an interim surrender obligation in respect of 75% of their estimated emissions, where the necessary allowances must be surrendered by June 15 of the current compliance year. The emissions report is due on October 31 and the final surrender must be made by February 1 (these dates continue in the flexible charge period). Free allocations will also be provided in two tranches to mirror the surrender obligations. Clean Energy Act 2011 Pt 6, Div.3, Subdiv.A (fixed charge years).
[42] Greenhouse Gas Emissions Trading Scheme Regulations 2005 reg.27A. More details regarding eligible allowances are provided in Department of Energy and Climate Change and Environment Agency, *A Guide to Using Kyoto Units in the European Union Emissions Trading Scheme (EU ETS)* (November 12, 2008), available at: *http://www.environment-agency.gov.uk/static/documents/Business/2008-11-12_Guide_to_Allowances_and_Kyoto_Units.pdf* [Accessed June 11, 2013].

eight per cent for others.[43] Although the limit was applied on an installation and annual basis, the extent to which any right to use CERs and ERUs is not fully utilised may be carried forward. More importantly for current purposes, Article 25 of the Trading Directive supports the mutual recognition of allowances from other ETSs, that is, linking. Linking has been effective in including the states of the European Economic Area into the EU ETS, in particular the inclusion of Norway, which established its own ETS in 2005.[44]

Australia's CPM provides for similar linking from commencement of the flexible charge period on July 1, 2015. For the first five years of this phase, up to 50 per cent of liabilities may be met by way of eligible international units.[45] The meaning of eligible international units for these purposes includes units created under the Kyoto Protocol, that is, CERs (with some limits) and ERUs, and also provides for the later inclusion of non-Kyoto units in the event of bilateral or multilateral agreements.[46] The amendments made to the Australian legislation to facilitate linking specifically list European allowance units as prescribed international units. The amendments also insert a cap of 12.5 per cent applicable to eligible Kyoto units (where this limit forms part of the overall 50 per cent cap of international units).

Taxation of scheme transactions

As identified in the Introduction and illustrated by way of the consideration of scheme features above, three main issues arise in determining taxation consequences of ETS transactions. The first issue is whether the entitlement to or receipt of a free allocation should be recognised as a derivation of income and, if so, when should it be recognised and how should it be valued. The second, and related, issue is when and how a liability under the ETS should be recognised. It is arguable that any benefit of a free allocation should be offset in whole or in part by the liability arising under the ETS. The third issue is the correct treatment of purchased allowances. These three issues all arise from the perspective of a liable entity but it must also be recognised that many participants in carbon markets will be as investors (financial institutions and traders) where the treatment of allowances should arguably follow that of other commodities. Although some comment will be made in this regard, a comprehensive analysis of the tax treatment of carbon traders is outside the scope of this article.

In the UK, the Corporation Tax applies to the profits of the company, where "profits" means income and chargeable gains, to the exclusion of the income tax and the capital gains tax.[47] Further, the charge on "income" applies to the profits of a trade[48] where such profits must be

[43] Department for Environment, Food and Rural Affairs, *EU Emissions Trading Scheme, Approved Phase II National Allocation Plan 2008–2012* (2007), 6, available at: *http://www.decc.gov.uk/en/content/cms/emissions/eu_ets/euets_phase_ii/phaseii_nap/phaseii_nap.aspx* [Accessed June 11, 2013].

[44] Decision of the EEA Joint Committee No.146/2007 amending Annex XX (Environment) to the EEA Agreement (October 26, 2007), incorporating the Trading Directive. Council Regulation (EC) No.2894/94 (the EEA Agreement). For a discussion of the work necessary to link the Norway scheme with the EU ETS see Ellerman, Convery and de Perthuis, above fn.9, 267–269.

[45] Clean Energy Act 2011 s.133(7).

[46] The meaning of "eligible international unit" for the purposes of the Clean Energy Act 2011 is given by reference to its meaning under the Australian National Registry of Emissions Units Act 2011 (Australia) s.5. See also the Explanatory Memorandum to the Australian National Registry of Emissions Units Bill 2011 Ch.2.

[47] CTA 2009 s.2. The relevant rate of the charge is determined by the Finance Act.

[48] CTA 2009 s.35.

calculated in accordance with generally accepted accounting practices and then adjusted as required or authorised by law.[49] The term "generally accepted accounting practice" specifically includes both UK GAAP and the International Accounting Standards.[50] Under the Companies Act 2006, registered companies must produce financial accounts that give a true and fair view of the profit and loss for the financial year and the state of affairs at the end of the year[51] and guidelines produced by the UK Accounting Standards Board (UK ASB) provide assistance in this regard. In addition, since January 1, 2005, EU listed companies are required to prepare their consolidated accounts based on International Accounting Standards (IAS), International Financial Reporting Standards (IFRS) and related Interpretations, and other standards and interpretations adopted by the International Accounting Standards Board (IASB).[52]

In relation to emission rights and other transactions arising under the EU ETS, neither the IASB nor the UK ASB has as yet been able to form a consensus view as to the proper accounting practice, where this uncertainty flows through into the calculation of profits of trade for the purposes of the UK Corporation Tax. Although a complete discussion of the accounting developments to date is beyond the scope of this article, the brief discussion in the next section highlights the issues involved.

Australia operates a global income taxation system where the income and capital gains of taxpayers, including companies, is subject to tax as calculated under the Income Tax Assessment Act 1997 (ITAA).[53] In contrast to other jurisdictions, rather than rely on accounting profits, a discrete set of taxation rules has been included in the ITAA that is designed to comprehensively address the tax implications of transactions related to allowances.

Accounting standards as a basis for UK Corporation Tax

In the lead up to the commencement of the first phase of the EU ETS, the IASB commenced work on the development of a specific interpretation for emissions rights. The IFRS Interpretations Committee released its interpretation regarding emissions rights (known as IFRIC 3) in December 2004 but IFRIC 3 was subject to significant criticism and was withdrawn only six months later, in June 2005, and was never adopted by the EU.[54] Since 2007, the IASB and the United States Financial Accounting Standards Board (FASB) have pursued an agenda project to develop an agreed interpretation but without result.[55] The last meetings recorded as having considered the

[49] CTA 2009 s.46.
[50] FA 2004 s.50.
[51] Companies Act 2006 ss.393 and 394.
[52] Regulation (EC) No.1606/2002 of the European Parliament and of the Council on the application of international accounting standards (July 19, 2002). IASB standards must be endorsed by the Commission before they are binding.
[53] The Income Tax Assessment Act 1997 (Australia) and the Income Tax Assessment Act 1936 (Australia) operate concurrently to determine the amount of taxable income. For the purposes of this article, these Acts will be referred to jointly as the ITAA.
[54] See the list of IFRIC Interpretations and their EU status on the Accounting section of the EU Single Market website, at: *http://ec.europa.eu/internal_market/accounting/ias/interpretations_en.htm* [Accessed June 11, 2013].
[55] For a more detailed discussion of the work of the IASB on these issues see S.D. Deatherage, *Carbon Trading Law and Practice* (Oxford: OUP, 2011), 275–278.

issues were held in late 2010.[56] In its most recent work plan, the IFRS has merely confirmed that these issues will be subject to further research.[57] The UK ASB has similarly not published any final standards or interpretations specific to the EU ETS and has been monitoring the IASB project.[58] The only published guidance is the Government Financial Reporting Manual that includes a discussion of accounting for the EU ETS and adopts an IFRIC 3 approach but this manual has limited application.[59]

The key issues addressed in the various IASB and FASB meetings largely reflect the same issues relevant for taxation. The accounting treatment of scheme transactions must reconcile accounting practice as dictated by IAS 20 (Government Grants), IAS 37 (Provisions) and IAS 38 (Intangible Assets). There is apparent consensus that in most cases entities with compliance obligations should treat allowances as intangibles assets, therefore triggering the application of IAS 38. One area of continuing contention centres on free allocations. A free allocation is akin to a government grant received in kind so, on the assumption that this would be in the nature of income or profits, questions arise as to the timing of the earning of this income as well as its valuation. Once the allocation is received, the allowances should be recognised as assets and their initial valuation, as well as potential revaluation, becomes important. According to IAS 20, grants received in kind can be recognised on a systematic basis over the period in which the relevant expenses are incurred (those expenses being the costs for which the grant is designed to compensate) based on the market value of the benefit received (where this market value then become the assets' carrying value). Alternatively, the recognition can effectively be deferred by accounting for the grant and the assets for a nominal or nil amount, where the carrying value of the assets then picks up this value. A second set of issues involves the treatment of the liability under the ETS. The liability would accrue as emissions are produced and could be valued as at the end of the financial year.[60] What is uncertain is whether the best estimate of the expenditure required to meet the liability should be based on the carrying value of allowances already held by the company or the market value of allowances as at the year end. Another view is that a liability should only be recognised where the emissions exceed the free allocation for the year (a net liability approach). A final issue relates to purchased allowances. Whether such allowances should be recorded at cost or revalued to market value would have an impact on the balance sheet.[61]

[56] The most recent joint IASB/FASB meeting was held in November 2011. Observer notes for this meeting can be viewed by way of the IFRS website, at: *http://www.ifrs.org/Current+Projects/IASB+Projects/Emission+Trading+Schemes/Meeting+Summaries/IASB+FASB+Nov+10.htm* [Accessed June 11, 2013].

[57] See IFRS, "Work Plan—as at April 30, 2013", "Research projects", available at: *http://www.ifrs.org/current-projects/iasb-projects/Pages/iasb-work-plan.aspx* [Accessed June 11, 2013].

[58] Financial Reporting Council, *Projects: IFRS: Emissions trading schemes*, available at: *http://www.frc.org.uk/Our-Work/Codes-Standards/Accounting-and-Reporting-Policy/Ongoing-projects/International-Financial-Reporting-Standards/Emissions-Trading-Schemes.aspx* [Accessed June 11, 2013].

[59] Treasury, *Government Financial Reporting Manual 2012–13* (2012–2013), Ch.7 ("Intangible assets"), paras 7.2.8–7.2.11.

[60] As the liability is denominated in allowances rather than cash, it is more correctly viewed as a provision than an accrued liability. IAS 37 distinguishes provisions from other liabilities where there is uncertainty about the timing or amount of future expenditure required to settle it. There could be uncertainty if insufficient allowances were on hand to meet the emissions liability.

[61] Pursuant to IAS 38 such increases in carrying amount will be reflected in an increase to the revaluation surplus and will not impact the profit and loss account.

The approach put forward under IFRIC 3 is as follows. Allowances were to be accounted for as intangible assets under IAS 38 and therefore the appropriate carrying value could be based on either the historical cost or revaluation methods. Free allocations would initially be recorded as assets at fair value and the difference between the amount paid (generally nil) and the fair value would be recognised as a government grant. This grant would be recorded as deferred income, which would be earned or recognised as income across the compliance period to which the free allocation relates. Under the EU ETS timeline, allocations are provided in February of the year to which they relate so the receipt and income recognition would fall within the same year. The liability/expense under the scheme would be recognised by way of a provision (IAS 37) where the best estimate of its value would be based on the number of allowances required and the market value of such allowances as at the end of the compliance period. These various items were not allowed to be shown on a net basis.

Concerns that the approach put forward in IFRIC 3 created measurement and reporting mismatches led to its withdrawal six months after its issuance. One of the main issues arises from the fact that, under IFRIC 3, the value of the deferred income (the government grant) is based on the value of the free allocation at the time of the grant whereas the emissions cost (the liability) is based on the market value of all allowances required. The IFRIC approach also grosses up the balance sheet by not allowing a net liability approach.[62]

A number of EU-wide surveys of accounting practices have been undertaken to determine the approach actually being adopted by companies in light of the lack of guidance from the accounting standards boards. Reports produced by PricewaterhouseCoopers (PwC) in conjunction with the International Emissions Trading Association[63] and the Association of Chartered Certified Accountants (ACCA)[64] as well as a more recently published study by Warwick and Ng[65] all reveal a significant degree of diversity in the approaches adopted by companies in the periods under review and a general rejection of the IFRIC 3 approach.[66]

[62] See J. Fornaro, K. Winkelman and D. Goldstein, "Accounting for emissions: Emerging issues and the need for global accounting standards" (2009) 1(208) *Journal of Accountancy* 40.

[63] International Emissions Trading Association and PricewaterhouseCoopers, *Trouble-Entry Accounting -Revisited: Uncertainty in accounting for the EU Emissions Trading Scheme and Certified Emission Reductions* (2007) (*Trouble-Entry Accounting*), available via the IETA website, at: *http://www.ieta.org/index.php?option=com_content&view=article&id=329%3Atrouble-entry-accounting-%E2%80%93-revisited%2A&catid=27%3Aarchived-reports&Itemid=93* [Accessed June 2011, 2013].

[64] H. Lovell, T. Sales de Aguiar, J. Bebbington and C. Larrinaga-Gonzáles, *Accounting for Carbon* (London: Association of Chartered Certified Accountants, 2010).

[65] P. Warwick and C. Ng, "The 'cost' of climate change: How carbon emissions allowances are accounted for amongst European Union companies" (2012) 22(1) *Australian Accounting Review* 54.

[66] The PwC survey results reflect the degree of dissatisfaction with IFRIC 3 as only 5% of respondents continued to follow that approach after its withdrawal. The survey showed 76% of those responding recorded free allocations at a nil value, contrary to the IFRIC 3 approach, and therefore did not recognise income over the period. The survey showed that 79% recorded allowances on an historic cost basis and were not revalued. Of the respondents, 47% valued the liability based on the carrying value of allowances held, not market value. When this liability was to be met wholly by free allocations, this would effectively mean that no liability would be shown in the accounts. Any excess liability would be valued based on the carrying value of purchased allowances and, only if there were a short-fall, the market value of allowances. *Trouble-Entry Accounting*, above fn. 63, 12, 16, 25. The reports by ACCA and Warwick and Ng reflect a similar mix of accounting treatments.

To advance the research on this issue, the author has undertaken a new study to examine accounting policy disclosures by large emitters operating in the EU.[67] This new study identifies a broader sample of participating entities than was used in the earlier studies by using the National Allocation Plans of the UK, Germany and Spain as the initial means of selection.[68] In almost all cases, financial statements for the 2011 year formed the basis of the analysis, providing a more up-to-date picture of accounting practices in this regard. The results with respect to the sample as a whole, as well as when limited to UK-based entities, identify a continuing lack of consistency in accounting practice.[69] However, the pattern in the disclosures suggests that reporting companies prefer one of two approaches. The most common approach (adopted by 34 per cent of the sample) recognises free allocations at nil value and only records the net liability for allowances for the given year when emissions exceed the level of the free allocations (referred to hereinafter as the Net Accounting Approach).[70] The second most common approach (adopted by 26 per cent of the sample) recognises free allocations at market value with a corresponding entry to deferred income and records the gross liability for allowances as at the end of the year (referred to hereinafter as the Gross Accounting Approach).[71] In both cases allowances are treated as intangible assets. A less common approach is to characterise allowances as inventory and record a nil value in relation to free allocations (adopted by 14 per cent of the sample).

As noted above, the starting point for the UK Corporation Tax is the profits of the trade of the company as calculated under generally accepted accounting practice but subject to any required adjustments.[72] Each of the accounting issues described above therefore may have an effect which follows on from the UK Corporation Tax. It may therefore be of some concern that the accounting bodies have failed to formulate a broadly acceptable approach to these issues

[67] C.M. Black, "Accounting for carbon emission allowances in the European Union: In search of consistency" in L. Evans (ed.), *Accounting in Europe* (European Accounting Association, forthcoming). The details of the design of the study, based on a content analysis method, are provided in the paper.

[68] *Trouble-Entry Accounting*, above fn.63, was based on a survey distributed Europe-wide to major organisations. The responses of 26 entities are analysed in the report. The Lovell study, above fn.64, identified installations from the European Commission's Community Independent Transaction Log and then identified the companies owning the top 25% of emitting installations. This produced 68 installations and 26 companies. The authors of this study then analysed the published accounts of these companies and found non-disclosure of accounting treatment of on average 25% for the questions. Five telephone interviews were also conducted. The most recent study, by Warwick and Ng, above fn.65, identified the sample based on the Carbon Monitoring for Action (CARMA) database where this ultimately led to the consideration of 2007 annual reports from 47 companies across Europe. One limitation of this study is that the CARMA database only covers the power generation sector. Like the ACCA study, a significant proportion of the sample did not disclose accounting treatment in relation to some of the most critical issues (for example 23.4% did not disclose the method of valuing free allocations, see Warwick and Ng, above fn.65, 61).

[69] This study examines to the published accounts of entities receiving significant free allocations under the EU ETS in order to determine the accounting treatment applied to allowances, which in many Member States flows on into taxation reporting. The identification of top emitters commenced with an analysis of the National Allocation Plans for Phase II of the EU ETS and was then narrowed based on the availability of online published accounts in a language accessible to the researchers. Where the accounting treatment in relation to allowances is disclosed in the accounts, a coding system is applied to produce a usable data set. This approach seeks to identify a larger sample of companies that disclose their accounting treatment for allowances so that a clearer picture may be drawn, by excluding those companies for which usable data is not disclosed, similar to the earlier PwC survey. Out of the final sample of 62 entities, 14 are either based or operating in the UK.

[70] Black, above fn.67.

[71] Black, above fn.67.

[72] CTA 2009 s.46.

and, as a result, there is significant variation in the treatment of these transactions in practice. For the purposes of considering these implications, the two more popular approaches based on intangible characterisation will be analysed further below.

Australia's approach: specific tax legislation

Quite unlike an approach based on financial accounts, the Australian Government has resolved most uncertainties by prescribing the tax treatment of ETS transactions in relation to all holders. As part of the package of legislation that established Australia's CPM, consequential amendments were made to the income tax legislation to include a new set of provisions designed exclusively in relation to emission allowance transactions, a new Division 420.[73]

Throughout the design stages of the ETS, the Australian Government has consistently taken the view that a discrete taxation regime in relation to scheme transactions was preferable to allowing the existing tax law to apply.[74] This new tax regime has broad coverage in relation to both the holders of allowances and the transactions undertaken. As a general matter, Division 420 seeks to place scheme transactions on revenue account (that is free allocations are income, scheme liabilities are deductible and profits and losses on allowances are included in income) and also provides specific rules in relation to the timing of the recognition of these amounts. These rules apply to allowances meeting the definition of "Registered Emissions Unit" (or REU), which encompasses allowances issued under Australia's CPM (Australian carbon units), land-based offsets under the Carbon Farming Initiative,[75] and Kyoto and prescribed international units once these are held on the Australian Registry.[76] The new linking amendments now have the effect of including European Allowance Units within the meaning of REUs.

The approach taken in Division 420 to scheme transactions is effectively a cash basis, where timing is determined on the basis of changes to the REUs held in the taxpayer's Australian Registry account. This mechanism has been modelled on Australia's trading stock rules and is

[73] New Division 420 to the Income Tax Assessment Act 1997 (Australia) (ITAA 1997) inserted by the Clean Energy (Consequential Amendments) Act 2011 (Australia), Sch.2. The provisions of Division 420 took effect on April 2, 2012, to coincide with the commencement of the Clean Energy Act 2011.

[74] Australian Government, *Carbon Pollution Reduction Scheme: Green Paper* (July 2008), Ch.11 ("Tax and accounting issues"), 401. For a discussion of the early taxation proposals included in the *Green Paper* see C. Black, "Climate change and tax law" in R. Lyster (ed.), *In the Wilds of Climate Law* (Australian Academic Press, Bowen Hills, Queensland, 2010), 155–172.

[75] Activities registered under the Carbon Farming Initiative, which can include both land-based sequestration activities as well as emissions abatement related to land use, may give rise to Australian Carbon Credit Units (ACCUs). ACCUs may be used to a limited extent to meet CPM liabilities during the fixed charge period and to an unlimited extent during the flexible charge years. Carbon Credits (Carbon Farming Initiative) Act 2011 (Australia). For a discussion of the Carbon Farming Initiative generally see C.M. Black, "Linking land sector activities to emissions trading: Australia's Carbon Farming Initiative" in L. Kreiser, A.Y. Sterling, P. Herrera, J.E. Milne and H. Ashiabor (eds), *Carbon Pricing, Growth and the Environment* (Cheltenham: Edward Elgar, 2012), 184–198. For a consideration of the particular taxation issues arising in relation to this scheme see C.M. Black and M. Dirkis, "Farming Carbon: Taxation implications of the Carbon Farming Initiative" (2011) 21 *Revenue Law Journal* 53.

[76] The term "Kyoto unit" is defined for these purposes by reference to the Australian National Registry of Emissions Units Act 2011, which defines the term in s.4 to include CERs and ERUs. International units not held on the Australian Registry are not REUs and are therefore not subject to the specific provisions of Division 420. Rather, the ordinary taxation provisions apply to these units. Division 420 does include specific provisions to deal with the importing and exporting of units in anticipation of linking. ITAA 1997 ss.420–21 and 420–35.

referred to in government documents as the "rolling balance method".[77] The basic rules provide that a deduction is available in relation to expenditure incurred to become the holder of an REU in the income year in which the entity begins to hold the REU.[78] A rolling balance is kept whereby the opening value of REUs held at the beginning of the year is compared to the closing balance of REUs held and any increase in value is included in income whereas any decrease in value is allowable as a deduction.[79] Finally, assessable income includes an amount that an entity is entitled to receive on ceasing to hold an REU, included in the year in which the REU is no longer held.[80] The interaction of these rules is described below in the context of the three identified issues and contrasted with the UK approach.[81]

Issue 1: receipt of free allocation

As noted above, free allocations will continue to form an important component of both the EU ETS and Australia's CPM for many years to come, primarily as a way to maintain the international competitiveness of domestic operations in a world where a carbon price is not uniformly applied. The treatment of such receipts of valuable property will continue to present issues for taxation purposes given that allocations are in effect government grants given in kind (in property rather than money).

The analysis of the UK Corporation Tax consequences must begin with the accounting treatment. The internationally accepted accounting standard for grants (IAS 20) and the equivalent UK GAAP (Statement of Standard Accounting Practice 4) provide that a government grant should be recognised as income over the relevant period, matching the expenses for which it is designed to compensate. As a free allocation is designed to cover the emissions liability that accrues over the compliance year, it would be appropriate to spread the income over that same period. This would accord with general taxation principles whereby a grant or subsidy to meet revenue expenses (here the ETS compliance liability) would ordinarily be a trading receipt. Where income is received in kind, it is appropriate to consider its money value as being derived. However, for accounting purposes, where the grant is provided as property rather than in money, IAS 20 provides an option to show both the asset (the allowances) and the grant at a nominal (nil) amount. By adopting the nil valuation option, the recognition of any gain or profit is effectively deferred until such time as the value of the allowances is realised, for example by way of sale, and there will be no gain recognised if the allowances are surrendered. This nil value approach is arguably not in accordance with taxation principles given that the grant or subsidy would generally be treated as a trading receipt in the year it is received unless there is a contingent obligation to repay it.

As previously noted, the Net Accounting Approach, which includes the nil valuation of the grant, has in practice been the preferred approach of companies for accounting purposes, although

[77] See, e.g. Australian Government, Clean Energy Future, "Tax treatment of units" available at: *http://www.cleanenergyfuture.gov.au/tax-treatment/* [Accessed June 11, 2013].
[78] ITAA 1997 s.420–15.
[79] ITAA 1997 s.420–45.
[80] ITAA 1997 s.420–25.
[81] For a comprehensive consideration of the tax consequences of transactions and events under Australia's CPM see C.M. Black, "Considering the taxation implications of Australia's Carbon Pricing Mechanism" (2012) 41(3) *Australian Tax Review* 136.

a significant minority have adopted the alternative Gross Accounting Approach. An issue that could warrant further investigation is whether companies adopting the Net Accounting Approach are adjusting their profits for UK Corporation Tax purposes to reflect this difference in timing but it will be assumed for the purposes of highlighting the differing implications of these approaches that such adjustments are not being made. On its face, from a tax perspective, there would appear to be a significant incentive to choose the nil value option so as to defer the recognition of income. However, in practice, the recognition of the grant as income is usually offset by the recognition of the gross ETS liability (discussed below) so the significance of the deferral gain will depend upon whether excess allowances are held beyond the compliance year.

Under the Australian approach, where a free allocation has been received by an entity and those REUs are still held by the year end, the rolling balance will include the value of those allowances. This would have the effect of increasing the rolling balance and would produce an amount of assessable income equal to the market value of the allowances when they were received. This market value then becomes the "cost" of these allowances. If the allowances are received and sold within the income tax year, the rules operate to simply include the gross proceeds in income. This approach is consistent with the general principle in Australian tax law that a grant connected with a business activity is assessable income. A special but significant concession has been provided to the energy-intensive, trade-exposed sectors to reflect the fact that free allocations are received in one year but need not be surrendered to meet the compliance obligation until the following year. Under the tax rules, Australia's CPM scheme liabilities are not tax deductible until the allowance is surrendered (this is discussed below). In order to provide some degree of matching of the income and expense, a so-called "no disadvantage rule" has been included in Division 420 to allow for a deferral of the recognition of free allocations until after the final surrender date for that vintage.[82] Simply put, given that allocations made in respect of year 1 will not be subject to a final surrender deadline until February 1 of the following year, only if some of the gratis allowances are still held by the end of that following year (June 30) will they be included in the closing balance and therefore picked up as income. The value included continues to be based on the market value as at the earlier date of allocation.

Therefore, by way of comparison of the two approaches, the impact of the Net Accounting Approach on trading profits for UK Corporation Tax purposes is to defer the recognition of the income/government grant in relation to the allocation until such time as the allowances are sold. The Gross Accounting Approach provides an inclusion of the market value of the allowances (as at the time of receipt) in profits earned through the year to which they relate. The Australian approach is somewhere in between. Considering emissions intensive sector assistance, limited deferral is allowed: only where the allowances/units are still held beyond the relevant surrender date are they included in income (then picking up the market value as at the time of receipt like the Gross Accounting Approach).

Issue 2: ETS liabilities

Emitting entities with obligations under either the EU ETS or Australia's CPM are required to monitor emissions throughout the period, have those emissions verified and then lodge a report

[82] ITAA 1997 ss.420–58, 420–60.

with the relevant regulator. As a result, the entity will be able to estimate the emissions for the year, and therefore the liability under the ETS, as at the end of the period with a fair degree of certainty.

To consider the tax treatment of this liability for UK Corporation Tax purposes, one must again commence with a consideration of the accounting treatment. As the obligation to surrender allowances under the ETS is fixed (not contingent) on the basis of the emissions produced during the period, it is appropriate to reflect this as a liability or provision for accounting purposes.[83] As this liability is measured in allowances to be surrendered (in kind rather than in cash), the liability should reflect the best estimate of the expenditure required to settle the obligation (IAS 37). Such an amount is therefore a debit (or expense) to profits.

There appear to be at least three different accounting practices adopted in relation to this valuation. The best estimate of the value of the liability could be based on the carrying value of allowances already held and, if these are insufficient, the balance can be calculated based on the market value of allowances as at the year end. If the free allocation has been given a nil carrying value, the value of the liability would therefore only reflect the cost to the company of buying additional allowances to meet the (net) obligation. Alternatively, if the free allocation is carried at the market value at the time of receipt, this could be the basis for the valuation of the obligation. This would give a gross value to the obligation but based on historic cost. Finally, in accordance with the approach advocated in IFRIC 3, the value of the obligation could be based on the market value of the total number of allowances needed as at the year-end (the gross market value amount of the liability).

In practice, under the more popular Net Accounting Approach, only the net liability is expensed and the evidence indicates that this net liability is most often measured by being based on the carrying value of allowances already on hand, with market value of allowances only used for any shortfall in holdings.[84] Under the Gross Accounting Approach, the gross or total liability is expensed but most companies in practice measure this liability based on the allowances on hand (not on the basis of the market value of allowances advocated by IFRIC 3).[85] If additional allowances are acquired in the following year to meet the obligation and the amount paid to acquire those allowances is more or less than that previously expensed, an additional profit or expense/loss on this component of the liability would be realised (the difference between the best estimate and the actual cost of acquiring the extra allowances).

When the treatment of the free allocation is combined with the valuation of the liability, there is in effect no difference in the impact on net profit between the approaches (Net and Gross Accounting Approaches). Under the Net Approach, only a net liability will be expensed when emissions exceed the free allocation. Under the Gross Accounting Approach, the grant and the liability (both based on the historic value of the allowances) will in effect cancel each other out and only show a net liability or expense. However, the approach advocated by IFRIC 3 creates real timing differences. As the emissions liability would be based on market value but the grant income is based on historic value, there will be a gain or loss realised in the following year on surrender, being the difference between the amount expensed (based on market value) and the

[83] See IAS 37 and FRS 12 on provisions.
[84] This preferred method for valuation was identified by Black, above fn.67.
[85] Black, above fn.67.

carrying value of the allowances actually surrendered, bringing the net expense back to the same amount reflected by an historic cost approach but, arguably, artificially spreading it over two years.

However, this analysis reveals another concern with the approaches which are based on historic cost. Under these methods, the best estimate of the liability is based on an assumption that the free allocation and other purchased allowances that are on hand will be used to meet the emissions liability. This could be the case but it is not necessarily so. It is possible (at least theoretically) that some of the free allowances will be banked for future years and new allowances will be purchased to meet the emissions liability. It is also possible that the company will have on hand allowances in excess of those necessary to meet the liability such that the application of a first-in, first-out (FIFO) or weighted average cost method will be required. This can also introduce volatility to profits if the liability is ultimately settled by way of allowances with a different carrying value.

In summary, a calculation of the profits of a trade based on accounting practices would lead to an expense for the emissions liability in the emissions year and an adjustment in the following year to reflect any difference between the best estimate of the liability and the cost ultimately incurred to meet that expense. In contrast, the Australian approach only provides a deduction for the cost of compliance on surrender of the allowances, which generally occurs in the following year. This creates a mismatch between the compliance expense and the income from the activity, which may have an impact on the economic cost of complying with Australia's CPM.

The rules of Division 420 produce this result as follows. As allowances are obtained during the compliance year an expense is allowed for their cost but when they are still held at the year-end, the closing balance will increase, giving rise to an income amount that offsets the acquisition expense. This closing balance becomes the opening balance for the following year. Since the allowances must be surrendered by February 1, these allowances will no longer be held at the year-end which produces a decline in the balance of REUs held and therefore an effective deduction for their carrying value. There is no need to rely on an estimate of the liability as the expense is not produced until the actual surrender. The valuation rules also dictate the cost of allowances that is reflected in this expense. Any allowances purchased and surrendered in the same year will simply produce the deduction for the cost of acquisition.

The benefit of an accounting-based approach in this regard is that it recognises the compliance liability as it accrues, which corresponds with the earning of income from the economic activity. However, with the lack of specific accounting guidance on the valuation of the liability, there is arguably an unacceptable level of variability in the determination of profits from one company to another. The alternative approach adopted by Australia removes the uncertainty with respect to both timing and valuation but creates the mismatch between the accruing liability and the tax expense. This mismatch underlies the need to include the "no disadvantage rule"[86] for recipients of industry assistance. The deferral of the deduction also impacts on the effective cost of compliance, at least at the margin.

[86] See above, fn.82.

Issue 3: allowances as assets

The research on accounting practices described above shows that a large proportion of emitting companies characterise emission allowances as intangible assets for accounting purposes pursuant to IAS 38 and FRS 10.[87] For the purposes of Part 8 of the UK Corporation Tax Act 2009 "intangible asset" takes its accounting meaning[88] and should pick up allowances. However, Part 8 also requires that the intangible asset be "fixed", that is acquired by the company for use on a continuing basis in the course of the company's activities.[89] There may be a difficulty in arguing that the allowances are held on a continuing basis as, in many cases, allowances are received by way of free allocations and will be surrendered to meet the emissions liability in the following year. Purchased allowances may also in many cases be held for only a short period prior to surrender. On the other hand, it is equally uncertain that allowances would be characterised as stock when held by compliance entities as they are not acquired with the intention of resale at a profit but rather with the intention of surrender. This highlights a tension in relying on the accounting characterisation where there is no settled policy. For the purposes of the analysis in this article, it will be assumed that the UK Corporation Tax characterisation of the allowances follows the accounting treatment by assuming that they are "intangible fixed assets", but this is not without doubt.

As allowances in principle could be seen as having an indefinite life, it would not be appropriate to amortise their cost, though impairment reviews might be necessary and are often undertaken by companies. These assets may be carried at cost or may also be revalued upwards.[90] Depending on the application of IAS 20, free allocations may be given a carrying value of either nil or the fair value on receipt and there is no requirement that such allowances be revalued upwards.

For UK Corporation Tax purposes, in brief summary, the rules for intangible assets adopt a revenue asset approach: amounts written off in the company's accounts usually give rise to a debit (expense) and receipts in relation to such assets are credits (revenue). However, a revaluation does not give rise to a credit unless it is reversing a previous write-down. Where an allowance is disposed of, the realisation proceeds are compared to the tax written down value of the asset and the net profit or loss gives rise to a taxable credit or debit.[91] If the asset has not been written down, the proceeds are compared to the tax cost.[92]

An impairment review may show that the carrying amount for an intangible asset exceeds its recoverable amount. In such a case, the impairment loss should be recognised in the profit and loss account[93] and this would give rise to a taxable debit (expense).[94] What is important to point

[87] Lovell, Sales de Aguiar, Bebbington and Larrinaga-Gonzáles, above fn.64, 22; Warwick and Ng, above fn.65, 61.
[88] CTA 2009 s.712. HMRC, *Corporate Intangibles Research & Development Manual* (CIRD) CIRD10101 includes agricultural quotas by way of an example of an "intangible asset" to which these rules apply. Such quotas are arguably analogous to an emissions allowance. At law, the nature of an allowance as intangible property has recently been confirmed in *Armstrong DLW GMBH v Winnington Networks Ltd* [2012] EWHC 10 (Ch).
[89] CTA 2009 s.713.
[90] Revaluation may be undertaken where an active market exists that can determine the fair value. IAS 38. Examples are given of such types of intangibles, such as fishing licences. An active market does exist for ETS allowances and therefore revaluations (to a revaluation surplus) would be acceptable.
[91] CTA 2009 s.735.
[92] CTA 2009 s.736.
[93] IAS 38 and IAS 36. See also CIRD30560—Intangible assets: notes on accounting practice: impairment loss.
[94] CTA 2009 s.729.

out, however, is that these rules will have no practical effect when free allocations are carried at nil value (as there is no value to write-down).

For UK Corporation Tax purposes, intangible assets, such as allowances, may be revalued upwards where there is a readily ascertainable market value.[95] However, a taxable credit will only arise in certain circumstances and, in the case of an intangible that is not amortised, such as an emissions allowance, such a credit would only generally arise on the reversal of an earlier impairment review.[96] A credit does not arise for revaluations above the original, historic cost. This is consistent with accounting practice under IAS 38 as upward revaluations are reflected in the revaluation surplus (in equity), not in the profit and loss account. So, in summary, allowances are treated as held on revenue account and a debit will arise in the case of an impairment loss but an upwards revaluation above the original cost is not recognised for tax purposes.

A critical aspect of the ETS is the participation of investors (such as financial institutions and carbon traders) that is necessary to bolster the liquidity of the carbon markets. Where allowances are not held for compliance purposes, it would seem likely that the intangible asset characterisation for accounting purposes as well as UK Corporation Tax purposes would not be appropriate. Rather, they may be considered inventories, as defined in IAS 2, given that they are held for sale in the ordinary course of business, also referred to as "stock" for the purposes of SSAP 9 and Schedule D. According to IAS 2, inventories are to be measured at whichever is the lower of cost and net realisable value, except in the case of broker-traders that may measure inventories at fair value less costs to sell.[97] In this context, "cost" is assigned on a FIFO or weighted-average cost basis unless the items are not ordinarily interchangeable, where specific identification is allowed.[98] For the purposes of the UK Corporation Tax and Schedule D, the accounting bases are accepted for stock, being the lower of cost or net realisable value or, where appropriate, mark to market, and these various methods would therefore be appropriate for allowances held for sale (in contrast to allowances held to meet compliance obligations).[99] Last-in, first-out (LIFO) is not accepted for either financial accounting or tax purposes.[100]

Under the Australian CPM tax rules, entities are given the option of valuing REUs at (historic) cost or market value.[101] Given the application of the rolling balance method, which mirrors the

[95] CIRD30580—Intangible assets: notes on accounting practice: revaluations and their recognition.

[96] CTA 2009 s.723. The taxable credit is limited to the lesser of the total debits previously allowed and the uplift in value, pro-rated for any difference that has arisen between the tax and accounting value. CIRD13050—Core computational rules: taxable credits: revaluation of intangible assets. An example of this computation is given in CIRD13060—Core computational rules: taxable credits: revaluation of intangible assets: example.

[97] IASB, International Accounting Standard 2: Inventories (IAS 2), paras 3(b) and 10.

[98] IAS 2, above fn.97, paras 23 and 25.

[99] HMRC, *Business Income Manual* (BIM33115). Mark to market will only be appropriate where there is a liquid market for the stock, as is the case for ETS allowances. See BIM33160.

[100] *Minister of National Revenue v Anaconda American Brass Ltd* [1956] AC 85 (Privy Council (Canada)) per Viscount Simonds.

[101] ITAA 1997 s.420–51. Three valuation methods are provided for in the legislation. The FIFO cost and historic cost methods are both based on the actual/historic cost of acquisition of allowances but the methods provide flexibility in determining those allowances still on hand. As the allowances issued under Australia's CPM have a vintage year and are each given a unique identifying number, the individual tracking required for the historic cost method is possible. It may, however, give rise to greater compliance costs. The market value method looks to market prices as at the year

treatment of trading stock, where market value is elected, both increases and decreases in value will be reflected in income, in contrast to the intangible asset approach under the UK Corporation Tax that will only reflect declines in value. Under the Australian rules, the sale of an allowance will effectively produce a net profit or loss (like the UK intangible asset treatment) due to the deduction for the carrying value (which is produced by the reduction in the rolling balance) and the inclusion of the proceeds in income.

An issue that has not yet received much attention in the EU is the possibility that an entity may have more than one purpose in holding allowances. A large emitter may hold a pool of allowances to meet compliance obligations and a portfolio of allowances for trading purposes. Where such is the case, a different characterisation and therefore valuation method may be appropriate for each portfolio and there may be movements between the groups. The Australian rules have in effect removed these complexities by deeming that all allowances are held as stock/inventory and prescribing the options for valuation (cost and market) for all holders, regardless of their purpose in holding allowances.[102]

Conclusions

The EU ETS and the Australian CPM share many design features that will support the linkage of the schemes once Australia's CPM moves to market pricing in 2015. These features include auctioning, broad coverage, free allocations for trade-exposed sectors and the ability to use approved international units and offsets. There are also common elements to the compliance timelines, where liabilities in relation to the scheme need not be satisfied until well into the next compliance year. However, one difference across the schemes, as illustrated in this article, is the taxation treatment of transactions. Although the UK Corporation Tax and the Australian income tax both effectively allow revenue treatment for scheme transactions, there are some significant differences in relation to timing and valuation.

As a general matter, one advantage of the Australian approach is certainty and predictability. By prescribing the taxation treatment of all allowances held on the Australian Registry and in relation to all owners of those units, there is consistency across taxpayers. Given the unsettled nature of accounting practice at the moment, an alternative approach that bases taxation on accounting profits may lead to differences in tax treatment that may not be acceptable from a policy perspective.

More specifically, the most significant distinction between the two jurisdictions is the timing of the deduction/debit for the compliance liability. Following an accounting-based approach, for UK Corporation Tax purposes, the liability is clearly expensed in the year it accrues and is incurred, that is, during the compliance year. As the valuation of this liability must be as at that

end. Taxpayers are given the option to elect their preferred valuation method and are also allowed to change methods to a limited extent from year to year. ITAA 1997 s.420–57.

[102] Although there is some flexibility in changing valuation methods from year to year, it is arguable that the same valuation method must be used in relation to all units held, foreclosing the possibility of choosing different valuation methods for different parcels. By the terms of ITAA 1997 s.420–55 a taxpayer must choose a method for working out *the value* of *the units* held at the end of the year. This would not seem to admit the argument that the taxpayer may choose a valuation method on a per allowance or per portfolio basis. Where the choice has not been made, FIFO applies as the default method.

year end, the best estimate may be based on the carrying value of allowances already held and, where this number is insufficient, the market value of allowances. This is in contrast to the Australian income tax approach that, in effect, uses a cash basis and does not recognise the expense until the surrender of allowances in the following year. This would mean that when the carbon price produced by the internationally linked market is faced by an entity operating in Australia under Australia's CPM and an entity in the UK subject to the EU ETS, the cost of the carbon compliance is effectively greater in Australia given that the expense, and the tax-shield that the corresponding deduction produces, is not recognised in Australia until the following year. Whether this, in practice, could have a significant effect on taxpayer behaviour or the market is an open question.

The other area of difference is in the recognition and valuation of free allocation where the treatment in Australia could be seen as a compromise between the two accounting approaches. The Net Accounting Approach potentially provides for indefinite deferral due to the nil value attributed to the allocation whilst the Gross Accounting Approach recognises the income from the allocation across the period for which it effectively acts as a subsidy. In effect, for most entities receiving assistance, the Australian tax rules provide a short-term deferral and only include in income the value of the grant in excess of that needed to meet the compliance obligation (by operation of the "no disadvantage rule").

In both jurisdictions, allowances are characterised as revenue assets. Consistent with IAS 38, Part 8 of the UK Corporation Tax Act recognises the write down in value of allowances (impairment) as a debit to profits but does not similarly recognise most upward revaluations. In contrast, Australia's Division 420 provides, under the market value method, that both increases and decreases in the value of allowances will impact net income. Given the short-term holding of allowances in most cases, it is arguable that the inventory/trading stock treatment adopted in Australia more closely reflects the character of the holding rather than the intangible fixed asset approach.

If one were to take harmonisation as a general goal, both in relation to ETS design and taxation treatment, then lessons could be drawn from both approaches described here to identify an "ideal" tax approach. Although the Australian approach has significant merit, in that it avoids the current uncertainty created by unresolved accounting standards and interpretations, by prescribing tax treatment that is effectively on a cash basis, it arguably moves the taxation treatment too far from the accepted commercial basis of accounting on an accruals basis. It is suggested that a statutory framework along the lines of the Gross Accounting Approach, but with the valuation options of historic or market value like that provided by the Australian tax approach, would be more effective in creating certainty and consistency whilst still maintaining a degree of flexibility with respect to revaluations.

Australia; Comparative law; Corporation tax; Emissions allowances; Emissions trading; Environmental taxation; EU law

CHAPTER FOUR: INTERNATIONAL TAXATION OF EMISSIONS TRADING TRANSACTIONS

INTRODUCTION TO PAPER 3

In tackling the challenge of reducing the production of harmful greenhouse gases, emissions trading schemes have the potential to achieve meaningful reductions in the most economically cost effective manner. By allowing the market to determine the permit price through permit trading, the most cost effective reductions will be undertaken first. This argument depends on a clear price signal to potential participants and this thesis proceeds on the basis that taxation can distort this price signal. By considering in detail the taxation implications of emissions trading transactions, this thesis identifies features of taxation systems which have the potential to distort the market. Papers 1 and 2 examine the financial accounting and income taxation consequences of the three main tax issues (free allocations, the emissions liability and permits as tradeable assets) in a purely domestic context. Paper 3 builds on this foundation and extends the analysis across borders by examining the taxation consequences of cross-border permit transactions. Adopting a framework developed by Kane,[1] this paper considers whether different approaches to the international taxation of these transactions violates inter-firm neutrality, which requires that permits are taxed in the same way across firms.

The object of Paper 3 is to examine the taxation consequences of cross-border transactions involving permits from the perspective of two hypothetical jurisdictions in order to identify whether circumstances could arise that would violate the goal of inter-firm neutrality. A total of six different trading scenarios are described and then the tax

[1] Mitchell A Kane, 'Taxation and Multi-Period Global Cap and Trade' (2011) 19 *NYU Environmental Law Journal* 87.

consequences are analysed under a variety of parameters. As a starting point, therefore, the parameters must be identified. They fall into three key areas: scheme linkage architectures; domestic taxation regimes; and international taxation regimes, including treaty practice.

The analysis of Paper 3 proceeds on the basis that cross-border flows of emission permits will be more likely to occur in practice when emissions trading schemes that have been established unilaterally are linked, given that a truly global emissions trading system is unlikely to be established in the short term. Three architectures for scheme linkage are described so that the mechanics of the cross-border flows can be specifically considered for tax purposes. These linkage mechanisms are referred to as common registry, direct link and indirect link.

The permit trading scenarios are considered from two domestic tax approaches. The first is the so-called 'Base Case' that is based broadly on general tax principles drawn from the traditions of the United Kingdom, Australia and, to a lesser extent, the United States. The analysis undertaken in Paper 2 provides the foundation for this element of Paper 3 but it has been extended in this paper to include a wider range of issues necessary for the international tax context. The Base Case set of rules is compared with the specific statutory tax regime created by Australia in Division 420 of the *Income Tax Assessment Act 1997* (Cth).

The final set of parameters is found in the international tax regimes, where this necessarily involves the interaction of tax treaties and domestic tax law. This section of the paper commences with a discussion of the role of tax treaties and then specifically considers the provisions of the OECD *Model Tax Convention on Income and on Capital*[2] and the United Nations *Model Double Taxation Convention between Developed and Developing*

[2] OECD, *Model Tax Convention on Income and on Capital* (2014).

Countries[3] that are potentially triggered in relation to emission permits: Article 7 (business profits), Article 13 (capital gains) and Article 6 (income from immovable property). Based on the conclusion that Article 7 is most likely to control the taxation of permit trading profits and expenses, a deeper consideration of the operation of article is undertaken. Specifically, the paper discusses changes to Article 7 that saw the adoption in 2010 of the Authorised OECD Approach (the AOA) to the attribution of profits to permanent establishments (PEs) and contrasts this to the approach to profit allocation adopted by Australia (which it continues to apply), which is a version of the relevant business activity approach.

Collectively, the six trading scenarios consider the taxation consequences across jurisdictions under the following variations of parameters: alternative linking mechanisms; Base Case domestic tax rules adopted by both jurisdictions; Base Case domestic tax rules in one jurisdiction and Division 420 style rules in the other jurisdiction; whether or not the transaction is carried out through a PE; and whether the AOA or a relevant business activity approach has been adopted for profit attribution when there is a PE involved. It is through this detailed consideration of these multiple variations that the potential for inconsistent tax treatment across jurisdictions is specifically identified. In many cases the differences are those of the timing rather than the quantum of income, profits or expenses, such as the profit being recognised in two stages in one jurisdiction and only on realisation in the second. Although such timing differences can be important, they generally should not lead to double taxation. There is greater concern for double taxation as a result of the operation of some of the provisions of Division 420 when coupled with the application of treaty principles, especially where one of the jurisdictions adopts both Division 420 and a relevant business activity approach to profit attribution (as Australia does) whilst the other jurisdiction adopts

[3] United Nations, Department of Economic & Social Affairs, *Model Double Taxation Convention between Developed and Developing Countries* (2011).

the Base Case tax rules and the AOA (as the UK appears to do). Paper 3 identifies instances where unrelieved double taxation could arise. This is an obvious violation of inter-firm neutrality and has the potential to distort the permit market, leading to less efficient emissions reductions.

Paper 3 has been written for publication in a scholarly Australian Taxation Law journal and therefore is formatted in accordance with the *Australian Guide to Legal Citation*,[4] which is the standard referencing style for law journals in Australia. Given that the readership of an Australia tax journal is unlikely to have read either Paper 1 (as it was published in an European accounting journal) or Paper 2 (as it was published in the UK), there is some degree of repetition in Part 3 of Paper 3 where some of the findings from the earlier papers are described.

[4] *Australian Guide to Legal Citation* (Melbourne University Law Review Association Inc and Melbourne Journal of International Law Inc, 3rd ed, 2010).

PAPER 3:

TAXATION OF CROSS-BORDER TRANSACTIONS INVOLVING CARBON EMISSION PERMITS AND LINKED EMISSIONS TRADING SCHEMES

The challenge to tax policy is immense, as the ultimate goal is to minimize distortions to a market that eventually will come into contact with many different tax systems.[1]

1. Introduction

Put simply, greenhouse gas emissions are a negative externality in that the producers of greenhouse gases do not face the full cost of their actions.[2] Correcting this market failure requires that the externality be internalised by putting a price on carbon, with policy alternatives including direct regulation, carbon taxes or emissions trading.[3] The Organisation for Economic Co-operation and Development (OECD) has concluded that explicit carbon pricing should be 'the central policy instrument' to meet the challenge of climate change,[4] a conclusion supported by detailed analysis of the potential effectiveness of alternative policy options undertaken by the International Monetary Fund (IMF).[5] A recent World Bank report evidences the continued growth of carbon pricing at a national and sub-national level[6] at a time where a post-Kyoto international solution is proving difficult. The IMF suggests that 'the choice between carbon taxes and cap-and-trade systems is less important than implementing one of them and getting the design details right,'[7] and this paper focuses on

[1] Mitchell A Kane, 'Taxation and Multi-Period Global Cap and Trade' (2011) 19 *NYU Environmental Law Journal* 87, 144.
[2] Nicholas Stern, Cabinet Office – HM Treasury, *The Economics of Climate Change: The Stern Review* (Cambridge University Press, 2007) 349.
[3] Ibid.
[4] OECD, 'Climate and Carbon: Aligning Prices and Policies' (Environment Policy Paper No 1, OECD, 2013) 9.
[5] Ruud a de Mooji, Michael Keen and Ian WH Parry, *Fiscal Policy to Mitigate Climate Change* (IMF, 2012).
[6] World Bank, *State and Trends in Carbon Pricing 2015* (2015) 10.
[7] Mooji et al, above n 5, 21.

one aspect of design, being the interaction of emissions trading systems and the international tax system.

A fundamental argument in support of emissions trading is that such a system can be both environmentally effective and economically cost effective: the emissions reduction target (by way of the scheme cap) can be achieved with the minimum cost by allowing the market to achieve an equalisation of marginal abatement costs across firms.[8] In other words, maximum emission reductions can be obtained with a minimal cost to the economy and, as Kane puts it, 'the bigger the market the better.'[9] He explains: 'if one wants to capture the least cost abatement opportunities through a market mechanism, then the market should encompass as many different candidate abatement strategies as possible.'[10] Such international emissions trading can be established by way of several avenues. Flachsland, Marschinski and Edenhofer divide these mechanisms into top-down and bottom-up approaches.[11] Although Kyoto-II global trading would have certain advantages,[12] reaching such an international agreement has proven thus far to be elusive[13] so bottom-up approaches, specifically by way of linking emissions trading schemes that have been established unilaterally, can provide the access to lower cost abatement options and greater market stability in lieu of a global scheme.

[8] Christian Flachsland, Robert Marschinski and Ottmar Edenhofer, 'Global trading versus linking: Architectures for international emissions trading' (2009) 37 *Energy Policy* 1637, 1638-9.
[9] Kane, above n 1, 87.
[10] Ibid.
[11] Flachsland et al, above n 8, 1637.
[12] Ibid at 1641.
[13] The Kyoto first commitment period expired in 2012. An amendment to the Kyoto Protocol to establish a second commitment period (to expire 2020) was adopted in Doha in December 2012 but requires acceptance by three-fourths of the Parties (114 instruments of acceptance in total) before it enters into force. As at 3 May 2016, only 65 countries have ratified the Doha Amendment. See UNFCCC, *Status of the Doha Amendment* (3 May 2016) <http://unfccc.int/kyoto_protocol/doha_amendment/items/7362.php>. Article 6 of the new Paris Agreement (adopted in January 2016) recognises the role of both market and non-market approaches to mitigation of emissions and sustainable development. Decision 1/CP.21, Adoption of the Paris Agreement, FCCC/CP/2015/10/Add.1, 29 January 2016. The Paris Agreement was opened for signature on 22 April 2016 and, as of 20 May 2016, there are 177 signatories and 17 States have ratified the agreement. See UNFCCC, *Paris Agreement – Status of Ratification* (2016) <http://unfccc.int/paris_agreement/items/9444.php>.

In deciding whether and how to link emissions trading schemes (ETSs), the main focus is generally on scheme design features, such as coverage, allocation mechanisms and price controls.[14] However, an important compatibility issue that has received little consideration to date is the application of taxation laws to transactions under the schemes, given that the tax implications have the potential to interfere with the efficient operation of the linked schemes. This paper uses as its starting point the analysis undertaken by Kane with respect to approaches to maintain abatement efficiency within a tax system:

> For a given amount of abatement of greenhouse gas emissions, as compared to a business as usual (BAU) baseline, there will be some set of abatement opportunities (taking account of space and time) that has the lowest social cost. Call that the efficient abatement set. The tax system satisfies the condition of abatement efficiency when it leaves in place pre-tax incentive to undertake only those abatement decisions inside the efficient set.[15]

Kane shows that there are two alternative pathways to achieve abatement cost-efficiency within a tax system: inter-firm neutrality (where permits are taxed in the same fashion across firms and abatement costs are also treated in the same fashion across firms) and intra-firm neutrality (where the firm faces the same tax treatment for permits and abatement costs).[16] This paper tests the current tax treatment of permits for inter-firm neutrality by providing a detailed examination of the tax consequences of cross-border transactions involving carbon emission permits and identifying those circumstances under which the tax rules fail the test of neutrality. In addition to a set of model tax rules drawn from current tax practice, the analysis specifically considers the taxation regime established for the purposes of Australia's now repealed emissions trading system, given that Australia's rules were explicitly designed with the objective of neutrality.[17]

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[14] Stefan E Weishaar, *Emissions Trading Design: A Critical Overview* (Edward Elgar Publishing, 2014) 194.
[15] Kane, above n 1, 90-1.
[16] Ibid 101-2.
[17] Australian Government, *Carbon Pollution Reduction Scheme: Australia's low pollution future: White Paper* (2008) ch 14 ('*White Paper'*). The Government was explicit in its desire to design the tax rules so as not to compromise the cost-efficiency of the permit market. A 'tax neutral design' would minimise distortions. *White Paper* 14-2.

The analysis undertaken in this paper focuses on the international tax implications of cross-border transactions involving emission permits by examining the operation of both the domestic tax law of the relevant jurisdictions and the impact of tax treaties. This paper does not address issues raised by differential company tax rates in difference jurisdictions and the impact that this may have on profit-shifting by multinationals.[18] Rather, this paper focuses on the technical differences in the operation of the tax rules, where such differences can arise, for example, in the identification of the relevant tax event, the timing of income or expense realisation and the allocation of profits across jurisdictions. The analysis is also of more general relevance as it provides a consideration of the application of the permanent establishment (PE) attribution rules to specific hypothetical business asset transactions under both the new and pre-2010 Article 7 (Business Profits) of the OECD's *Model Tax Convention on Income and on Capital* (OECD Model).[19]

This paper begins by providing the necessary context. Part 2 includes a brief discussion of the arguments for linking ETSs and describes three forms of linking: indirect linking, direct linking and the common registry approach. Rather than simply drawing on theory, this section considers the linking arrangements between the California and Quebec ETSs and the preliminary work done on developing approaches to the now abandoned link between the Australia's Carbon Pricing Mechanism (CPM) and the EU Emissions Trading System (EU ETS). Part 3 provides a discussion of the approaches to taxing ETS transactions at a domestic level from the perspective of holding emission permits as business assets. This section identifies the most common approach to permit taxation (referred to as the 'base

[18] For an analysis of this issue see, eg, Harry Huizinga and Luc Laeven, 'International profit shifting within multinationals: A multi-country perspective' (2008) 92 *Journal of Public Economics* 1164 and the studies cited therein.

[19] OECD, *Model Tax Convention on Income and on Capital* (2014) ('*OECD Model*'). The OECD Model includes the text of the Articles of the Model and their Commentaries as well as other relevant reports and other information. The OECD Model is updated on a regular basis. For the purposes of this paper, a reference to the 'OECD Model' refers to the most recently updated version from 2014. References to earlier versions will specify the relevant year. References to the Commentaries will specify the year in all cases.

case'), which is based on the application of general tax law principles and draws on accounting treatment, and compares this to the special statutory tax regime established in Australia.

With the context provided in Part 3, Part 4 analyses the international tax law principles that are applicable to cross-border emission permit transactions. This necessarily involves the interaction of domestic law and tax treaty law. Emphasis is given to the implications of the OECD Model but, where there may be differences in outcome, attention is also given to the United Nations *Model Double Taxation Convention between Developed and Developing Countries* (UN Model).[20] Particular attention is paid to Article 7 (Business Profits) of the OECD Model and recent changes to the attribution of business profits to parts of an enterprise but Article 6 (Income from Immovable Property) and Article 13 (Capital Gains) are also considered. Against this backdrop, the specific domestic laws of Australia and the United Kingdom (UK) that relate to these potential international transactions are then highlighted.

Part 5 applies the principles identified in earlier parts of the paper through the consideration of a variety of hypothetical cross-border permit transactions. Each hypothetical and variation is considered from various perspectives. First, a 'generic' framework is considered based on two jurisdictions adopting a base case approach to taxation of emission permits (from Part 3) and having in place a tax treaty based on the OECD Model (including the 2010 amendments to Article 7 described in Part 4). Any significant variations that would result from a tax treaty based on the UN Model are highlighted. This is then compared to the results if it is assumed that one of the jurisdictions has adopted special tax rules for permits modelled on Australia's approach. The various cross-border transactions are also considered

[20] United Nations Department of Economic and Social Affairs, *Model Double Taxation Convention between Developed and Developing Countries* (UN, 2011) ('*UN Model*').

under the assumption that part of the transaction occurs through a PE, thereby triggering the PE profit attribution rules provided under the tax treaty and domestic law. In this context, two approaches to PE profit attribution are considered: the authorised OECD approach and the relevant business activity approach. The analysis of these various scenarios and variations is designed to identify those cases where the operation of the taxation rules results in either a timing difference or potential double taxation. In conclusion, an overall assessment of the current international tax regime against the criteria of inter-firm neutrality is undertaken.

2. Arrangements for Scheme Linking

The goal of this paper is to analyse the taxation consequences of cross-border emission permit transactions in light of the objective of inter-firm neutrality and to thereby identify the strength and weakness of current taxation regimes. The starting point must therefore be a determination of the legal form of these cross-border transactions. In the absence of a top-down global ETS, independent ETSs can be linked indirectly or directly as a bottom-up approach. Flachsland et al have analysed the theoretical environmental effectiveness, cost effectiveness and political feasibility of these various approaches and this paper does not reconsider these issues.[21] Rather, it seeks to describe the approaches to linking that have recently been developed in order to appreciate the form of cross-border transactions under the different models.

Part 3 then describes the tax rules that apply to domestic transactions involving emission permits. Through a consideration of general tax principles that apply to business assets and the role of accounting treatment, a generic model (the base case) for the taxation of permit transactions is developed. This is then contrasted to the specific statutory regime established in Australia. Part 4 then considers international tax rules.

[21] Flachsland et al, above n 8.

Models for Linking

As noted above, in the absence of an international consensus to establish a global carbon market, which seems less than likely in the short term, an increasing number of jurisdictions, both national and sub-national, have taken unilateral action to establish or are working to establish emissions trading as part of their policy response to climate change. Although Australia has recently repealed its ETS architecture,[22] this is against the world trend, with the most notable new entrant in terms of volume of greenhouse gases covered being the seven pilot programs now operating in China, making it the second largest carbon market in the world, with plans for a national ETS by 2017.[23] As more schemes develop and cover a larger proportion of global emissions, there will be an incentive for schemes to link either unilaterally or under bilateral or multilateral agreements to take advantage of more cost-effective abatement options and to create a more liquid and stable carbon market.

Some benefits of linking can be obtained by way of indirect or unilateral linking. This is basically a one-way link under which one scheme will accept the permits of another scheme for compliance purposes. Bilateral or formal linking allows permits from each scheme to be accepted in the other, enhancing cost-effectiveness compared to a one-way link.[24] Formal linking has been established by way of jurisdictions sharing a common registry or by allowing free transfer of units between the two registries. For the purposes of this paper, the details of the alternative linking architectures will be examined so that the relevant cross-

[22] *Clean Energy Legislation (Carbon Tax Repeal) Act 2014* (Cth) and associated legislation with effect from 1 July 2014.
[23] *State and Trends in Carbon Pricing 2015*, above n 6, 42. All seven pilot programs (in order of launch date: Shenzhen, Shanghai, Bejing, Guangdong, Tianjin, Hubei and Chongqing) had commenced by June 2014 and China's President Xi has announced that China will have a national ETS by 2017. Jeff Swartz, *China's National Emissions Trading System: Implications for Carbon Markets and Trade* (International Centre for Trade and Sustainable Development, Issue Paper No 6, 2016).
[24] Flachsland et al, above n 8, 1644.

border transactions can be appreciated. To organised the analysis, the following three linking mechanisms will be examined:

1. The common registry approach;
2. The full linking approach; and
3. The indirect linking approach.

Illustrations of the mechanisms for direct and indirect linking can be found in the linking design consultation paper produced jointly by the European Commission and the Australian Government (hereinafter referred to as the 'Linking Design Paper').[25] Since June 2012, the European Commission has operated a common registry for the EU ETS, bringing the previous Member States' national registries together.[26] A common registry approach has also been adopted to support the link between the cap-and-trade programs of California and Quebec that commenced on 1 January 2014.[27] It is through an examination of the mechanics under which the transfers of permits across schemes may occur that the transactions will be identified and the tax consequences then analysed.

Given the intangible nature of emission permits, the key to all three approaches is an entity's registry account as it provides a running balance of permits owned or held by that entity. Permits acquired through an auction process or issued gratis under an industry assistance program are directly credited by the regulator to the entity's account. From this account, the entity can nominate permits to be surrendered to meet compliance obligations.

[25] European Commission and Australian Government, Department of Climate Change and Energy Efficiency, *Registry options to facilitate linking of emissions trading systems: Consultation paper* (2013).
[26] European Commission, 'Single registry has replaced national registries' <http://ec.europa.eu/clima/policies/ets/registry/index_en.htm>.
[27] California Air Resources Board and Government of Quebec, *Agreement between the California Air Resources Board and the Gouvernement du Quebec concerning the Harmonization and Integration of Cap-and-Trade Programs for Reducing Greenhouse Gas Emissions* (2013). The Canadian province of Ontario has also announced its intention to establish a cap-and-trade program and to join the Quebec and California scheme. See Premier of Ontario Kathleen Wynne, 'Cap and Trade System to Limit Greenhouse Gas Pollution in Ontario' (News Release, 13 April 2015) and, more recently, Ministry of the Environment and Climate Change, Ontario, 'Reducing Greenhouse Gas Pollution Through Cap and Trade' (Press Release, 8 June 2016).

Finally, over-the-counter sales of permits will be reflected in transfer from the seller's registry account to that of the purchaser. When the purchaser and seller carry on business in different jurisdictions, the mechanism for the cross-border trade of a permit will depend upon the linking architecture.

The common registry approach

The most fully integrated approach to linking is the common registry approach such as that operating in relation to the EU ETS as well as the California and Quebec linked schemes. By way of example, the mechanisms of the newer California-Quebec link are described here. These two jurisdictions have been active participants in the development of the Western Climate Initiative (WCI). Through the WCI, a detailed 'roadmap' for the implementation of regional cap-and-trade programs was developed.[28] Given that the California and Quebec schemes have been based on this roadmap, the process of harmonisation and linking has been relatively straightforward.

Again briefly and by way of background, the State of California made a commitment in 2006[29] to reduce greenhouse gas emissions and the government body charged with this task, the California Air Resources Board, adopted regulations to establish a cap-and-trade program as a fundamental tool to achieve cost-effective emissions reductions.[30] The first auctions of permits took place in late 2012 and compliance obligations commenced on 1 January 2013.[31] Similarly, the Quebec cap-and-trade program was made possible through an

[28] WCI Partners, *Design for the WCI Regional Program* (2010) was developed by the WCI Partners being the US States of Arizona, California, Montana, New Mexico, Oregon, Utah and Washington and the Canadian Provinces of British Columbia, Manitoba, Ontario and Quebec.
[29] *Global Warming Solutions Act of 2006* AB 32, Nunez, ch 488 Cal Stat 2006, adding Division 25.5 to the Health and Safety Code.
[30] California Code of Regulations, Title 17, subch 10, Art 5 California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, §§ 95801-96023.
[31] Information on the cap-and-trade program generally and the auctions specifically can be found on the California Air Resources Board website <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>.

amendment in 2009 to the *Environmental Quality Act*[32] and regulations issued thereunder in 2011.[33] The first compliance period commenced on 1 January 2013 and ran for two years, followed by two further compliance periods of three years each.[34]

A key element of the linking program is tied to the joint operation by California and Quebec of the Compliance Instrument Tracking System Service (CITSS). This system is used to register entities and track compliance instruments, including transfers and surrenders, under both schemes and was designed to be able to support linking and cross scheme transfers.[35] With reference to the Quebec regulations, within the CITSS, a regulated entity (emitter) must register with the CITSS and is given a general account (that can be used for trading and retiring permits) and a compliance account (which is used to hold compliance instruments/permits designated to meet the emissions liability).[36] After an entity submits its emission report for the compliance period, the Minister is empowered to deduct permits from the compliance account in an order specified in the Regulations, where these permits are transferred to the Minister's retirement account and are extinguished.[37] Other entities that might otherwise wish to participate in the market can register with CITSS and will be given a general account (only). With the aid of this CITSS, linking commenced on 1 January 2014 and joint auctions have been held since November 2014.[38]

[32] *An Act to amend the Environmental Quality Act and other legislative provisions in relation to climate change*, RSQ 2009.
[33] *Regulation respecting a cap-and-trade system for greenhouse gas emission permits*, RR 2011, c Q-2, r 46.1.
[34] Gouvernement de Quebec, *Regulation Respecting a Cap-and-Trade System for Greenhouse Gas Emission Permits (C&T): Technical Overview* (2013).
[35] State of California, Air Resources Board, *Linking Readiness Report* (2013) 17-8.
[36] *Regulation respecting a cap-and-trade system for greenhouse gas emission permits*, RR 2011, c Q-2, r 46.1, cl 14.
[37] Ibid cl 21.
[38] Details of the joint auction results can be found at the California Air Resources Board, 'Auction and Reserve Sale Information' available at http://www.arb.ca.gov/cc/capandtrade/auction/auction.htm.

The direct linking approach

An alternative mechanism to achieve full linking is the direct linking approach that allows for permits issued under one cap-and-trade system to be transferred to another system and used to meet compliance obligations under that second scheme. Unlike the indirect approach described below, the permits would be transferable from one registry to the other, preferably seamlessly and automatically, and would not lose their identity. Such a system would obviously require a bilateral agreement and coordinated efforts to ensure that the two registries work together.

In August 2012, the European Commission and the Australian Government announced an agreement in principle to link the EU ETS to Australia's CPM.[39] The stated goals were to develop an interim link from 2015 whereby EU permits would be accepted to meet up to 50 per cent of compliance liabilities under the Australian scheme and by 1 July 2018 there would be full two-way linking between the systems.

In brief, by way of background, the EU ETS commenced operation in 2005 and entered 'Phase III' in 2013.[40] Phase I (2005-2008) is generally seen as a trial phase when many of the elements of the system were developed, Phase II (2008-2012) included the

[39] The Australian Minister for Climate Change and Energy Efficiency, Hon Greg Combet MP, and the European Commissioner for Climate Action, Ms Connie Hedegaard, 'Australia and European Commission agree on pathway towards fully linking emissions trading systems' (Joint Press Release, 28 August 2012).

[40] The EU ETS was established by virtue of the EU Emissions Trading Directive as amended by the Linking Directive. *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission permit trading within the Community and amending Council Directive 96/61/EC* [2003] OJ L 275/25 (Trading Directive). *Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission permit trading within the Community, in respect of the Kyoto Protocol's project mechanisms* [2004] OJ L 338/18 (Linking Directive).

auctioning of up to 10 per cent of permits, and Phase III (2013-2020) involves a significant reduction in free allocations.[41]

Australia's CPM commenced operation on 1 July 2012 and was designed to include two stages.[42] The first stage, from 2012-2015, set a fixed price for permits and, as a result, operated much like a carbon tax.[43] In stage two, referred to as the flexible charge period, the pricing of permits would have been determined through auctioning and trading in secondary markets. The date of transition to this market-based pricing was determined to be the appropriate point at which EU permits would be accepted for surrender.[44] Although Australia's CPM has been repealed, the work done on the potential linking mechanisms is still quite valuable as a model for other jurisdictions.

As described in the Linking Design Paper,[45] the importation of an EU permit under a direct linking system would involve the holder nominating both the permit held in an EU registry account that is to be transferred and the Australian registry account into which it should be transferred. The two registries would verify the transaction, again preferably automatically, and the permit would be removed from the EU Registry account and included in the Australian Registry account. The flow of permits in either direction between the two registries should therefore be simple and streamlined.

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[41] *Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission permit trading scheme of the Community* [2009] OJ L 140/63 (the Phase III Directive).

[42] Australian Government, *Securing a clean energy future: The Australian Government's climate change plan* (2011). A package of 13 bills was approved by Parliament in November 2011. The main elements of the Carbon Pricing Mechanism were established by the *Clean Energy Act 2011* (Cth).

[43] The initial fixed price was set at AUD$23 per permit and was indexed to rise by 2.5% in real terms in each of the following two years. *Clean Energy Act 2011* (Cth) s 100(1). Also, like a carbon tax, there is no cap to the number of permits that may be issued in the first stage.

[44] The Australian Parliament has enacted legislation to set up the mechanisms necessary for linking. See *Clean Energy Amendment (International Emissions Trading and Other Measures) Act 2012* (Cth) amending the *Clean Energy Act 2011* (Cth) (under which Australia's CPM is established) and the *Australian National Registry of Emissions Units Act 2011* (Cth).

[45] European Commission and Australian Government, Department of Climate Change and Energy Efficiency, *Registry options to facilitate linking of emissions trading systems: Consultation paper* (2013) 23-5 (*Linking Design Paper*).

The distinction between the direct linking approach and the common registry approach lies in the need to maintain separate registries and registry accounts. Under the direct linking approach, each jurisdiction maintains its own registry but allows permits to be transferred between them. Even though permits are solely electronic, they will at any given time be 'on' a particular registry. This also means that entities intending to engage in cross-border transfers will need to maintain registry accounts for both jurisdictions. In contrast, under the common registry approach there is obviously no need for permits to move between registries and only one account would be required for trading purposes, though it would probably still be necessary to maintain a compliance account with respect to each system under which one might have a compliance liability.

The indirect linking approach

The indirect linking approach, as proposed in the Linking Design Paper, is a mechanism whereby one jurisdiction may allow the use of emission permits from another cap-and-trade system without formally linking the schemes. As a result, the linking is only one-way, allowing for only the in-flow of prescribed permits. In fact, it is possible to set up such an indirect link unilaterally as it is not necessary that the other jurisdiction consent to the arrangement. Importantly, the mechanism developed for the Linking Design Paper does not provide for the transfer of the foreign-issued permit to the domestic registry account but rather provides for the issue of a replacement or 'shadow' permit on the domestic registry.[46] Under the proposal developed by the EU and Australia, if an entity wished to import an EU permit, that entity would first acquire the permit and hold it in an EU Registry account established by the entity. The entity would then nominate the permit for importation and direct that it be transferred to an account held by the Australian Government.

[46] Ibid 17-22.

Simultaneously, the Australian Government would issue a replacement or 'shadow' permit, called an Australian-issued international permit (AIIU) in the Linking Design Paper. The AIIU could then be traded in the Australian carbon market and would be eligible for surrender. When an AIIU is surrendered to meet a compliance obligation under the Australian CPM, the Australian Government would direct that the corresponding EU permit be transferred from its account on the EU Registry to the EU Deletion Account and thereby both effect its cancellation and ensure that it cannot be double-counted as a surrender against liabilities.[47]

The mechanism as proposed also allows an entity to convert an AIIU back to an EU permit, again through the Australian Government EU account. The entity would nominate the AIIU that it desires to swap back and the EU Registry account to which the EU permit should be transferred. The AIIU would be removed from the Australian Registry account and cancelled, and simultaneously an EU permit would be transferred from the Australian Government EU Registry account to the nominated entity's EU account. The view was taken in the Linking Design Paper that the swap-back was necessary to facilitate liquidity in the market and the development of derivatives markets.[48]

In summary

This section has described real-world examples of three approaches to scheme linkages. The indirect linking approach allows a one-way in-flow of permits from another scheme (such as the EU ETS) that may be used to meet compliance obligations within the home scheme (such as the Australian CPM). The details of this approach require the transfer of permits held on the overseas registry to the home government's account and the issue of shadow units on the home scheme registry. Therefore, technically, there is a disposal of the

[47] Ibid 26.
[48] Ibid 22.

original permits and a matching acquisition of replacement permits. The direct linking approach also maintains permit registries in each jurisdiction but allows for permits to be freely transferred between registry accounts such that the permit does not lose its identity. Therefore, there is no technical disposal as in the indirect case but the permits 'move' between registries and jurisdictions. The common registry approach achieves the fullest degree of integration in that only one registry is maintained and disposals of permits to entities from the other jurisdiction can be effected directly.

3. Tax Approaches to Domestic Transactions

This section builds a picture of two different taxation approaches to domestic transactions involving emission permits. The 'base case' is grounded in an application of general tax principles to permit transactions and draws from the tax traditions of Australia and the UK, and to a lesser extent the US. The second approach is based specifically on the special legislative regime developed by Australia to address these issues. Ultimately, in Part 5, these two approaches will be tested against the inter-firm neutrality objective.

As described in earlier work,[49] the most significant issues from a domestic tax point of view that arise under an ETS are the following:

1. The treatment of free allocations;
2. The recognition of liabilities under the ETS; and
3. The treatment of permits as an asset class.

With the added possibility of international transfers under linking, the third element will become more significant. The goal of this section is to provide a general description of the domestic tax treatment of these three issues under the two tax approaches. Based on this

[49] See Celeste Black, 'Approaches to the Taxation Treatment of Carbon Emission Allowances and Liabilities: Comparing the United Kingdom and Australia' (2013) 3 *British Tax Review* 287.

framework, Part 4 will then analyse the application of the international tax regime to permit transactions.

The Base Case: The application of general tax principles

Nearly all jurisdictions that participate in an ETS rely on the general tax principles enshrined in their tax legislation to determine the consequences of ETS transactions and have not enacted specific rules. In many jurisdictions, including the UK, the taxation of company profits relies on accounting profits as the starting point for determining taxable income,[50] but there is currently a lack of consensus with respect to the most appropriate way to report the effects of an ETS in one's financial accounts. The International Accounting Standards Board (IASB) released an interpretative decision in late 2004, on the eve of the commencement of the EU ETS, but controversy surrounding the implications of the approach led to its withdrawal only six months later.[51] In late 2014, the IFRS Foundation and the IASB re-launched a project in this area, now referred to as 'Pollutant pricing mechanisms', and, in April 2016, IFRS released a Project Update that identifies the issues to be considered and a proposed plan.[52] However, to date, the new project has not yet produced any decisions or recommendations.

A study previously undertaken by the author identifies the accounting approach taken in practice by a sample of high emitters subject to the EU ETS and reveals a continued lack of consistency in treatment.[53] A significant majority of entities characterise emission permits

[50] See European Commission, *Report on the responses received to the Consultation of Accounting Regulatory Committee Members on the Use of Options within the Accounting Directives* (European Commissioner, 2011) 'Responses to Question 8' <http://ec.europa.eu/internal_market/ accounting/docs/2010-options_en.pdf>.
[51] International Financial Reporting Standards Interpretations Committee, 'IFRIC 3: Emission Rights' (released December 2004, withdrawn June 2005).
[52] IFRS, *IASB Meeting—Education session, Project—Pollutant Pricing Mechanisms, Agenda Paper 20—Project Update* (2016).
[53] Celeste Black, 'Accounting for Carbon Emission Permits in the European Union: In Search of Consistency' (2013) 10(2) *Accounting in Europe* 223. This study builds on three previously published studies on the issue: Peter Warwick and Chew Ng, 'The "cost" of climate change: How carbon emissions allowances are accounted

as intangible assets for book purposes[54] and all accrue a liability for emission obligations as the emissions are produced. However, the valuation of the liability varies and is strongly correlated with the treatment of free allocations. A high percentage of entities record free allocations at a nominal or nil value,[55] which corresponds to a view that income or gain from such an allocation is only realised if/when the permits are sold. When such an approach was taken with respect to free allocations, in almost all cases where the treatment could be identified, these entities only recorded an emissions liability when the level of emissions exceeded the free allocation, a net liability approach.[56] The alternative approach, adopted by substantially fewer entities, was to record free allocations at market value on receipt,[57] effectively recognising the income or gain from receiving valuable property for nil consideration. In these cases, a gross liability approach was taken, that is, the total emissions liability was recognised in the accounts,[58] which is in effect substantially offset by the income recognised from the free allocation.

The preference to record free allocations at a nil value for accounting purposes may reflect the tax treatment adopted in the US in relation to permits issued under its Acid Rain Program. There is evidence that this preference to defer the recognition of income arising

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for amongst European Union companies' (2012) 22(1) *Australian Accounting Review* 54; Heather Lovell, Thereza Sales de Aguiar, Jan Bebbington and Carlos Larrinaga-Gonzáles, *Accounting for Carbon* (Research Report No 122, Association of Chartered Certified Accountants, 2010); and PricewaterhouseCoopers and the International Emissions Trading Association, *Trouble Entry Accounting – Revisited* (International Emissions Trading Association, 2007).

[54] A total of 69.4% of the sample entities disclosed the characterisation of emission permits as intangible assets: Black, 'Accounting for Carbon Emission Permits in the European Union', above n 53, 231.

[55] Ibid 232. A total of 62.9% of the sample entities disclosed a nil or nominal valuation for free allocations.

[56] Ibid 236. A total of 32 out of 35 of the sample entities that disclosed a nil or nominal valuation for free allocations adopted the net liability approach.

[57] Ibid 232. A total of 30.6% of the sample entities disclosed market valuation for free allocations.

[58] Ibid 236. All of the sample entities disclosed a market valuation for free allocations adopted a gross liability approach.

from a free allocation until such time as the permits are sold, if not surrendered, has also been adopted in the majority of jurisdictions participating in an ETS.[59]

As part of the Acid Rain Program, the US established one of the first emissions trading systems.[60] The permit trading system applies to emissions of sulphur dioxide by fossil fuel-fired power plants, commencing in 1995 and moving to stricter cap from 2000. A feature of the scheme since its commencement has been the allocation of free permits.[61] In this regard, the US Internal Revenue Service (IRS) issued administrative guidance by way of a Revenue Ruling that states that the receipt of such an allocation is not a realisation of income and, accordingly, the basis in the permits would not be measured at fair value.[62] A similar approach has been taken more recently by the IRS in relation to offset permits for carbon sequestration.[63] This treatment, which leads to a nil cost basis and therefore deferral of income derivation, has been criticised as leading to a 'lock-in' effect which can have a detrimental impact on the liquidity and efficiency of the permit market, especially across periods.[64] Lucas argues that this treatment should not be extended more broadly to carbon permits but Kane suggests that there is 'no clear answer across all markets' to this complex

[59] The OECD has recently stated that, although a state could recognise income related to a free permit at the time that the permit is issued, '[i]t appears, however, that in those States in which emission permits are currently issued for free or for less than fair market value, such an approach has not been adopted or would only be applied in limited circumstances.' OECD Committee on Fiscal Affairs, *Tax Treaty Issues related to Emissions Permits/Credits* (OECD, 2014) [14]. An earlier report sponsored by Copenhagen Economics concluded, based on a Deloitte study, that 24 of 27 EU countries analysed do not tax free permits on receipt. Sigurd Næss-Schmidt, Ulrik Møller, Eske S Hansen and Jonatan Tops, *Tax treatment of ETS allowances: Options for improving transparency and efficiency* (Copenhagen Economics, 2010) 9.

[60] The Acid Rain Program was nominated in the *Clean Air Act Amendments of 1990* 42 USC subch IV-A (1990) as the mechanism whereby reductions in sulphur dioxide emissions could be achieved. The Program is operated through the US Environmental Protection Agency and information the program can be found on the EPA website <http://www.epa.gov/airmarkets/progsregs/arp/basic.html>.

[61] 42 USC § 7651b authorises the allocation of permits to existing and new power generation permits.

[62] IRS, Rev Ruling 92-16 (1992) 'Issuance of Emission Permits'.

[63] IRS, Private Letter Ruling 201228020 (17 April 2012); IRS, Private Letter Ruling 201123003 (4 March 2011). It should be noted that Private Letter Rulings are not binding advice from the IRS to other taxpayers but they can be referred to in order to indicate a view towards these issues. Both of these opinions relate to forestry offsets.

[64] Gary M Lucas, 'The Taxation of Emissions Permits Distributed for Free as Part of a Carbon Cap-and-Trade Program' (2010) *1 George Washington Journal of Energy & Environmental Law* 16 and Ethan Yale, 'Taxing Cap-and-Trade Environmental Regulation' (2008) 37 *Journal of Legal Studies* 535.

issue.[65] In any event, for the purposes of the Base Case, it will be assumed that this deferral (nil basis) approach has been adopted for free allocations. As a result, the receipt of free allocations is not treated as a derivation of income and such permits are given a nil cost basis. If a free permit is surrendered to meet a compliance obligation there will be no tax effect. If instead the permit is sold, the gross proceeds will be included in income. This is based on the conclusion that permits are held on revenue account, which is analysed below.

The second important issue to be addressed from a tax perspective is the timing and valuation of the compliance expense. The compliance liability under an ETS is based on the measured emissions for the period, which is usually twelve months.[66] However, the administration of all such schemes now in operation allows a number of months for the preparation of the emissions report. For example, under the Quebec scheme, emissions reports must be submitted by 1 June for the period to 31 December.[67] In many cases, the reporting schemes were developed by jurisdictions so that they could gather the information necessary to meet their reporting requirements under the UNFCCC and were in place before the introduction of the ETS.[68] The final surrender deadlines are usually some months later again; for example, under the EU ETS, the reporting date is 31 March but the surrender date is 30 April, whilst in Australia, the reporting deadline was 31 October but the surrender deadline was not until 1 February of the following year.[69] These compliance timelines show that there is a mismatch between the accrual of the liability and its satisfaction. This is not of itself unusual but added complexity comes from the fact that the liability is denominated in a number of permits rather than as a cash amount.

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[65] Kane, above n 1.

[66] The Quebec system is unusual in this regard in that the first compliance period is two years and the following compliance periods are three years. Gouvernement de Quebec, *Regulation Respecting a Cap-and-Trade System for Greenhouse Gas Emission Permits (C&T): Technical Overview* (2013) at 6.

[67] *Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere*, RRQ 2007, cl 6.2, made under the *Environment Quality Act*, RSQ 1972, c Q-2.

[68] For example, the Australian legislation requiring reporting has operated since 2007, but this information was used to determine compliance liabilities under the CPM only from 2012.

[69] *National Greenhouse and Energy Reporting Act 2007* (Cth) and *Clean Energy Act* (Cth) s 133 (repealed).

According to general tax principles, under the accruals basis of taxation ordinarily applicable to business activities, a loss or outgoing is incurred (and therefore deductible) in the year in which there is a presently existing liability.[70] In the case of an ETS, there are arguably two questions to be addressed: is the liability incurred by the tax year-end and, if so, is the liability capable of reasonable estimation? An analogy can be drawn to insurance and indemnity cases, in particular the decision of the Privy Council in *Commissioner of Inland Revenue (NZ) v Mitsubishi Motors New Zealand Ltd*,[71] which confirmed that warranty costs associated with the sale of new cars were incurred and deductible, even though the value of the liability was based on a statistical estimation. With reference to the High Court of Australia decision *Federal Commissioner of Taxation v James Flood Pty Ltd*,[72] the question was framed as 'whether the taxpayer is "definitively committed" to an expenditure or whether it is merely "impending, threatened or expected"'.[73] In other words, 'the question is rather whether, in the light of all the surrounding circumstances, a legal obligation to make a payment in the future can be said to have accrued'[74] where this was a matter of construction, requiring an examination of the terms of the warranty.[75] In this regard, their Lordships made reference to the Australian insurance cases, which emphasised that in those instances, the liabilities were not at law contingent because the accidents had already occurred.[76] Applying these criteria to the current context, it may well be the case that when a covered installation produces designated greenhouse gas emissions, this creates the legal liability under the ETS legislation and the lodgement of an emissions report is not a pre-condition to that liability

[70] *W Nevill & Co Ltd v Federal Commissioner of Taxation* (1937) 56 CLR 290.
[71] *Commissioner of Inland Revenue (NZ) v Mitsubishi Motors New Zealand Ltd* [1996] AC 315, [1995] 3 WLR 671 ('*Mitsubishi Motors*').
[72] *Federal Commissioner of Taxation v James Flood Pty Ltd* (1953) 88 CLR 492.
[73] *Mitsubishi Motors* at 327, citing with approval *Federal Commissioner of Taxation v James Flood Pty Ltd* (1953) 88 CLR 492, 506-507.
[74] *Mitsubishi Motors* [1996] AC 315, 327.
[75] Ibid 325.
[76] Ibid 326, with reference to *RACV Insurance Pty Ltd v Commissioner of Taxation* [1975] VR 1 ('*RACV Insurance*'), and *Commercial Union Assurance Co of Australia Ltd v Federal Commissioner of Taxation* (1977) 14 ALR 651 ('*Commercial Union*').

arising. This conclusion will turn on a legal analysis of the ETS legislation of the particular jurisdiction and it may be that, in some jurisdictions, the legal liability may only arise on submission of the emissions report or when a default assessment is made by the regulator in the case of non-compliance.[77] However, for accounting purposes the compliance cost will be recognised in the year of production (matched to the activity that produced the emissions) and in many jurisdictions the tax accounting rules follow financial accounting principles with respect to the timing. It is assumed for the purposes of the analysis here that the compliance liability is incurred as necessary for tax purposes in the year the emissions are produced.

Once a conclusion has been made that the liability is incurred by the end of the year, the value of that liability must be determined. That such a process 'does not rule out statistical estimation of facts'[78] admits the use of 'reasonable estimation' of the amount incurred,[79] as illustrated in the Australian insurance cases. In those cases, the insurers were allowed deductions for unreported claims on the basis that the events giving rise to liability had already occurred (therefore the liability was incurred) and they were able to reasonably estimate the value of those claims.[80] Given the existence of detailed methodologies to measure carbon emissions and prior year reports, an entity would likely have a reasonable

[77] A detailed consideration of this issue is outside the scope of this paper but a few comments are made here to illustrate the variations amongst jurisdictions. The Quebec regulations specific that '[e]very emitter to which this Regulation applies is required, in accordance with the terms and conditions of this Chapter, to cover each metric tonne CO2 equivalent of the verified emissions from an establishment' where this suggests that the liability arises on emission rather than at the lodgment of the emissions report: *Regulation respecting a cap-and-trade system for greenhouse gas emission permits*, RRQ 2011, cl 19. The earlier recognition of the liability is also supported by the fact that the compliance periods under the Quebec scheme are more than one year and emitters would be disadvantaged if they were unable to claim the compliance expense until after the end of the compliance period. The UK regulations establish a scheme whereby the operator of a covered installation must hold a permit to carry out the regulated activity and it is through the contents of the permits that obligations arise: *Greenhouse Gas Emissions Trading Scheme Regulations 2012* (UK) SI 2012/3038, regs 9 and 10. Schedule 4 to these regulations provide the contents of a greenhouse gas emission permit which include a requirement to monitor annual reportable emissions, a requirement to prepare and submit a verified report of the emissions and a condition obliging the operator to surrender the number of allowances equal to the annual reportable emissions. *Greenhouse Gas Emissions Trading Scheme Regulations 2012* (UK) SI 2012/3038, sch 4, cl 2. Although it is clear when the surrender event must occur, it is unclear when the emissions liability arises.

[78] *Mitsubishi Motors* [1996] AC 315, 326.

[79] *Australia and New Zealand Banking Group Limited v Federal Commissioner of Taxation* (1994) Aus Tax Reports 559 ('*ANZ Banking Group*').

[80] *RACV Insurance* [1975] VR 1 and *Commercial Union* (1977) 14 ALR 651. This approach was extended to a self-insurer in *ANZ Banking Group* (1994) Aus Tax Reports 559.

basis to estimate the level of emissions for a given year on the basis of production in the period.

Once the emissions number for the year has been determined, it would need to be valued. This issue has presented some disagreement in accounting circles. The original IFRIC advice stated that the value of the compliance liability should be based on the market value of permits as at the year-end as this would be its 'best estimate' for the purposes of the relevant accounting standard[81] whereas an industry preference was to use the carrying value of permits on hand. It should be appreciated that an entity may well not have on hand, as at the end of the compliance year, sufficient permits to meet the liability, especially as surrender dates are often several months later. The approach adopted in practice appears to be that, at least for accounting purposes, entities will use the carrying value of permits on hand as a starting point and if on-hand permits are insufficient, use the market value for the balance.[82] This assumes that the designated permits on-hand will be surrendered to meet the liability (which may not necessarily be the case) but such an assumption is probably reasonable and would also likely be accepted for tax deduction purposes. It should also be appreciated that a consequence of using a nil cost basis for free permits is that the emissions liability/expense will only in effect show the net liability, being the value of permits that are needed above the free allocation for the year. The IRS has provided guidance on this issue in relation to the Acid Rain Program that appears to be consistent with this approach, stating that an entity is able to recover the cost of permits 'by deducting its tax basis in that emission allowance in the year that the sulphur dioxide was emitted.'[83]

[81] International Accounting Standard 37 Provisions, Contingent Liabilities and Contingent Assets.
[82] See Black, above n 53.
[83] IRS, Revenue Procedure 92-91, 1992-2 CB 503 (July 1992). See also Yoram Margalioth, 'Tax Policy Analysis of Climate Change' (2010-11) 64 *Tax Law Review* 63.

In the following income tax year, when the requisite permits are surrendered, an adjustment must be available to reflect any difference between the original expense as estimated and the cost of the permits ultimately surrendered. This would take into account any difference between the emissions estimate and the emissions number finally reported as well as any difference between the value of permits used to calculate the amount of the expense in year one and the cost attributed to the permits actually used to meet the liability in year two. This is, in effect, recognising any gain or loss on the liability.[84] Again by way of analogy, the approach taken to gains and losses on trade debts denominated in foreign currency could be applied here as the liability is denominated in carbon permits. The decisions of the High Court of Australia in *Texas Co (Australasia) Ltd v Federal Commissioner of Taxation*[85] and *International Nickel Australia Ltd v Commissioner of Taxation*[86] both address liabilities in relation to the acquisition of trading stock, denominated in a foreign currency, where the amount expensed when the liability was incurred was based on the then exchange rate. When the payments were ultimately made, a difference arose due to fluctuations in the exchange rate in the interim, an extra amount of Australian dollars being required in the *Texas Co* case and a lesser amount required in *International Nickel*. The High Court in *Texas Co* allowed the deduction for the extra expense (being the additional amount payable) and this approach was extended to treat the gain as income in *International Nickel*. The same approach should apply in the case of the ETS compliance expense, given that the expense is clearly on revenue account, being in effect an additional cost of production, and therefore the gain or loss on this liability should similarly be reflected on revenue account.

The final issue to be considered is the characterisation of permits as assets in the hands of the holder, where this will have implications for the character of any gain or loss

[84] For a more detailed discussion see Ross W Parsons, *Income Taxation in Australia: Principles of Income, Deductibility and Tax Accounting* (Law Book, 1985) [6.322] – [6.330].
[85] *Texas Co (Australasia) Ltd v Federal Commissioner of Taxation* (1939-40) 63 CLR 382.
[86] *International Nickel Australia Ltd v Commissioner of Taxation* (1977) CLR 347.

realised on the sale thereof. Aside from the financial institution/trader that would hold permits as inventory/trading stock, in the case of compliance entities it is more likely that permits will be considered to be acquired, sold and surrendered in the ordinary course of carrying on its business activity. Parsons suggested the term 'revenue asset' to describe such a class of asset: 'an asset whose realisation is inherent in, or incidental to, the carrying on of a business' as distinguished from a structural/capital asset.[87] The cost of acquiring a revenue asset is not a deductible outgoing but the profit realised on the sale of such an asset (determined by comparing proceeds to cost) would be treated as income derived whilst a (net) loss would be a deductible expense. This treatment also produces the appropriate result when applied to free allocations as the (gross) proceeds would in effect be the profit and therefore the gain to the taxpayer is realised on disposal. This also accords with the more common characterisation of permits as intangible (current) assets for accounting purposes[88] and as intangible fixed assets under the UK Corporation Tax.[89] In contrast, the IRS has characterised allowances issued under the Acid Rain Program as capital assets, which results in a quarantining of losses but also allows access to roll-over treatment on the exchange of allowances,[90] but no clear advice has been provided by the IRS in relation to permits issued under a broader ETS. For tax purposes, most jurisdictions require a realisation event (a

[87] Parsons, above n 84, [2.478]. This concept developed through a string of banking and insurance cases but, as suggested by Parsons, 'the range of assets that may be revenue assets of a business is without limit': at [2.484]. The principal banking and insurances cases cited by Parsons at [2.467] are *Punjab Co-operative Bank Ltd v Income Tax Commissioner, Lahore* [1940] AC 1055, *Commissioner of Taxation (NSW) v Commercial Banking Co of Sydney Ltd* (1927) 27 SR 231, *Colonial Mutual Life Assurance Society Ltd v Federal Commissioner of Taxation* [1946] HCA 60; (1946) 73 CLR 604 and *Australasian Catholic Assurance Co Ltd v Federal Commissioner of Taxation* [1959] HCA 26; (1959) 100 CLR 502.

[88] See Black, above n 53.

[89] The analysis leading to this characterisation is provided in Black, 'Approaches to the Taxation Treatment of Carbon Emission Allowances and Liabilities', above n 49.

[90] IRS, Revenue Procedure 92-91, 1992-2 CB 503 (July 1992). The rollover is available under the *Internal Revenue Code 1954*, 26 USC § 1031 (1954). The issue of characterization as capital assets was more closely analysed in IRS, Private Letter Ruling 200728032 (5 April 2007) but this guidance is not binding. The issue was left open in relation to permits issued under the EU ETS, see IRS Private Letter Ruling 200825009 (20 June 2008) and see Margalioth, above n 83.

disposal or change of ownership) to trigger the recognition of gains and losses on assets other than inventory.

In summary, this section describes the basic tax rules that are taken to be the 'base case' for the later analysis. Although there is no consensus in relation to tax treatment, a preference for certain approaches is emerging with the following elements. A free allocation of permits is not treated as a realisation of income but those permits will have a nil cost basis for the purposes of later transactions. The emissions liability accrues and is recognised as a business expense not unlike other costs of production. The value of the liability/expense is estimated based on the carrying value of permits on hand and, if insufficient permits are on hand, market value will be used to estimate the balance of the expense. A reconciliation (true-up) adjustment can be made in the following year when the permits are actually surrendered, to adjust the prior year estimate with the actual cost of the permits used to meet the compliance obligation. Permits are business (revenue) assets that are carried at historic cost for tax purposes and, on the occurrence of a realisation event, any profit will be included in income and any loss will be deductible.

The Australian statutory approach

The tax treatment of ETS transactions was included in the design process in Australia from an early stage and the Government concluded that a specific statutory regime applicable to these transactions was preferable to the application of general principles.[91] This conclusion was based on the traditional tax policy objectives of equity, efficiency and simplicity.[92] In particular, the Government considered it important that the same tax consequences apply to

[91] Australian Government, *Carbon Pollution Reduction Scheme: Green Paper* (2008) ch 11, 401 ('*Green Paper*') and Australian Government, *Carbon Pollution Reduction Scheme: Australia's low pollution future: White Paper* (2008) ch 14 ('*White Paper*'). For a discussion of the early taxation proposals included in the *Green Paper* see Celeste Black, 'Climate change and tax law' in Rosemary Lyster (ed) *In the Wilds of Climate Law* (Australian Academic Press, 2010) 155-72.
[92] *White Paper*, above n 91, ch 14-2.

all taxpayers dealing in ETS permits, whether the permits were held for compliance purposes or for trading.[93] This reflects the principle of neutrality. As a result, the new statutory regime, Division 420 of the *Income Tax Assessment Act 1997* (Cth) (ITAA 1997), overrides the provisions of general application.[94] Even though Australia's CPM has been repealed, Division 420 still has residual operation since it also applies to Australia's land-based offsets.

The rules of Division 420, as enacted, apply to 'registered emissions units' (REUs), where this term included Australian issued permits (both compliance permits and permits issued under the Australian land-based offsets scheme, the Carbon Farming Initiative) as well as Kyoto and prescribed international permits (such as permits from any future linked scheme), but only when such permits are held in an Australian registry account.[95] This final requirement is very important for the linking context since, once an REU leaves the Australian registry, it ceases to be an REU as defined and the provisions of Division 420 no longer apply. Instead, the ordinary tax principles are enlivened and the movement out of Division 420 may trigger domestic tax consequences.

Division 420 prescribes a regime for transactions involving REUs that is based on the Australian trading stock rules[96] and all transactions are on revenue account. Detailed analysis of the provisions of Division 420 is available elsewhere[97] but can be summarised as follows. The regime centres on the annual measure of REUs held in the registry account, where an increase or decrease in the value of REUs held is included in income or available as a deduction, respectively.[98] This feature gives the regime its working name: the rolling balance

[93] Ibid ch 14-4.
[94] Division 420 of the *Income Tax Assessment Act 1997* (Cth) (*ITAA 1997*) was inserted by the *Clean Energy (Consequential Amendments) Act 2011* (Cth) sch 2. The provisions of Division 420 took effect on 2 April 2012, to coincide with the commencement of the *Clean Energy Act 2011* (Cth).
[95] *ITAA 1997* s 420-12.
[96] *ITAA 1997* Div 70.
[97] See Celeste Black, 'Considering the taxation implications of Australia's Carbon Pricing Mechanism' (2012) 41(3) *Australian Tax Review* 136.
[98] *ITAA 1997* s 420-45.

method.[99] In addition, costs of purchasing REUs are deductible outgoings[100] and the proceeds on the sale of an REU are included in assessable income.[101]

Although the mechanisms are different, Division 420 will produce a net profit or loss figure that mirrors the tax treatment of revenue assets under the Base Case as follows.

Table 1. Transactional analysis under Base Case Approach and Division 420

Transaction	*Base Case Approach*	*Division 420*
Purchase of permit for $10 in year 1	Outlay of $10 (not a deduction)	Deduction for ($10)
End of year—still on hand	---	Include in closing balance at cost=$10: increase in balance included in income
Net tax effect	---	($10) + $10 = nil
Sale of permit in year 2 for $12	[$12 - $10] = $2 profit included in income	Proceeds of $12 included in income
End of year—no longer on hand	---	Decline in closing balance at cost=$10: Decline in balance available as a deduction ($10)
Net tax effect	Profit of $2 included in assessable income	$12 + ($10) = $2 net profit reflected in taxable income

Another distinguishing feature of the rolling balance method is that the timing of the tax event is linked to the movements in the registry account. The key concept is to 'hold' an REU, which is defined as when there is an entry for the unit in the entity's registry account.[102] As a result, the expense for the purchase of an REU is only available when the REU begins to be held in the account and the proceeds on sale are included in income when

[99] See, eg, *White Paper*, above n 91, ch 14-5.
[100] *ITAA 1997* s 420-15.
[101] Ibid s 420-25.
[102] Ibid s 420-12.

the REU ceases to be held in the account. Similarly, the closing balance is determined by the REUs held in the registry account at the year-end (30 June). This differs slightly from the ordinary trading stock rules, which generally look whether the item is 'on hand' at the relevant time.[103] In the context of a sale of trading stock, this has been interpreted to mean, usually, when the taxpayer loses dispositive power over the item,[104] which may be a different time to that when title is transferred, but for revenue and capital assets the usual test is a change of ownership. Within a domestic context, this Division 420 timing rule is unlikely to produce substantially different tax consequences compared to other asset categories but an international transfer (which may or may not be a disposal) will also mean that the permits are no longer in the registry account so special rules (discussed below in Part 4) have been included in Division 420 to address such transfers.

More substantial differences in treatment arise compared to the Base Case in relation to free allocations and compliance expenses. As discussed above, most jurisdictions apply a nil cost base rule to free allocations with the result that the gain from the receipt of such permits is deferred until realisation. If a free permit is surrendered to meet a compliance obligation, there will be no gain or loss. Under the Australian statutory rules, the default position is that the value of a free allocation is included in income in the year the permit begins to be held in the registry account.[105] This accords with the tax approach taken in Australia to government grants generally, whether in cash or in kind, where such grants are treated as income derived.[106] However, this rule is subject to a substantial exception referred

[103] See, eg, ibid s 70-35.
[104] *Farnsworth v Federal Commissioner of Taxation* (1949) 78 CLR 504; *All States Frozen Foods Pty Ltd v Federal Commissioner of Taxation* [1990] FCA 79.
[105] This is achieved by the combination of the inclusion of the free units in the closing balance for the year, which must be valued at cost or market value, and a deemed cost equal to the market value immediately after the entity begins to hold the free units: *ITAA 1997* s 420-60.
[106] This is pursuant both to general principles regarding ordinary income and statutory provision. See *Squatting Investment Co Ltd v Federal Commissioner of Taxation* (1954) 88 CLR 413 and *ITAA 1997* s 15-10.

to as the 'no disadvantage rule'.[107] This rule, applicable to free allocations made under the emissions-intensive, trade-exposed (EITE) industries support scheme,[108] allows the inclusion in income to be deferred until after the compliance deadline for the year for which the permits have been issued. For example, if an installation were issued 500,000 free Australian permits in September 2013 with respect to the 2013/14 compliance year, the value of those permits would only be included in income if they are still held in the registry account as at 30 June 2015, being the tax year end following the final surrender date for the 2013/14 year (being 15 February 2015). If the permits are surrendered or sold prior to this date, the tax effect is the same as under the nil cost base approach: if surrendered, there is no tax effect; and if sold, the gross proceeds are included in income. It is important to note that the no disadvantage rule was never available for free allocations made to the coal-fired electricity generation sector.[109] The assistance to the electricity sector was designed as a transitional measure only and therefore, for tax purposes, was treated in the same way as any other government grant, assessable in the year of receipt by way of the rolling balance method. In contrast, the EITE industry support scheme was designed to operate on an ongoing basis to preserve the international competitiveness of these industries.

In relation to compliance expenses, Division 420 operates to provide the deduction for the compliance expense only when the permits are surrendered. This is due to the fact that the expense is indirectly provided through the measure of the permits held in the registry account as at the year-end—in isolation the surrender of permits would mean that the value of permits held declines and this reduction is available as a deduction. Although this approach is perhaps

[107] This term was coined in the *White Paper*. See *White Paper*, above n 91, ch 14-14 and *ITAA 1997* s 420-58.
[108] This scheme was known as the 'Jobs and Competitiveness Program' and operated under Part 7 of the now repealed *Clean Energy Act 2011* (Cth). See <http://www.cleanenergyregulator.gov.au/Infohub/Data-and-information/Pages/Jobs-and-competitiveness-program-issued-units.aspx>.
[109] This scheme, which was run by the Energy Security Fund, was to provide free allocations to highly emissions-intensive generators as a transitional measure over four years. See <http://www.cleanenergyregulator.gov.au/Infohub/Data-and-information/Pages/Coal-fired-generation-units.aspx>.

simpler as it does not require the valuation and true-up calculations described as part of the Base Case, it does generate a mismatch between the ETS compliance expense and the other costs of production as it defers the compliance expense to the following income year.

In summary, a comparison of the Base Case rules and the Australian statutory approach in relation to domestic transactions is as follows.

Table 2. Issues analysis under Base Case and Australian Statutory Approaches

Issue	*Base Case Approach*	*Australian Statutory Approach*
Free allocations	No income on receipt Nil cost base	Income on receipt No disadvantage rule for EITE
Compliance liabilities	Recognised on an accruals basis; valued based on cost of permits on hand	Only recognised in year of surrender (when no longer included in rolling balance)
	On surrender, true-up adjustment	
Asset characterisation	Intangible business assets; gains/losses on revenue account	REUs when on Australian registry; profits/losses recognised via rolling balance
		Permits not on Australian registry subject to ordinary rules

4. International Tax Consequences – Domestic and Treaty Law

With the two models of domestic taxation of ETS transactions now described, this Part examines the tax law principles relevant to international transfers of permits and associated transactions. This discussion is framed in light of the cross-border permit transactions that may arise in a business context, which may therefore involve both transactions involving third parties and transfers of use within an enterprise, such as between a head office and a branch.

This Part begins with a brief description of the general principles of international taxation and then examines the potential application of tax treaties and their interaction with domestic tax law. As will be shown, whether a transaction or event gives rise to a tax liability is determined under domestic law but this power to tax may be limited by the application of a bilateral tax treaty. For example, the right of a state to tax the income from business activities of a non-resident enterprise is usually limited to cases where those activities constitute a permanent establishment (PE). Therefore, the interaction of the domestic law and the relevant treaty is critical. In this Part, the taxation of business profits will be the focus, with reference to both the OECD Model and the UN Model. The domestic law of Australia and the UK in relation to international transactions will then be described. The principles identified in this Part will be applied to the hypothetical permit trading examples that are analysed in Part 5.

General Principles of International Tax Law

The determination of the taxation consequences of a cross-border transaction involves a consideration of the domestic tax laws of the two relevant jurisdictions as well as any tax treaty that may be in place. It is generally accepted that the power to tax is exercised, that is,

tax is raised or charged, through the domestic law.[110] This is therefore the usual starting point. However, a tax treaty may override or limit the operation of the domestic law, depending on the terms of the treaty as well as the domestic law. A tax treaty is itself binding on the states under international law but taxpayers gain rights and obligations under the treaty through its incorporation into domestic law. For example, in Australia, tax treaties are given the force of law by the *International Tax Agreements Act 1953* (Cth)[111] and, in the case of any inconsistency, the provisions of a tax treaty prevail over domestic law (except for the operation of the income tax general anti-avoidance rule).[112] In comparison, the UK domestic law also gives effect to tax treaties by way of statute, but only in so far as the treaty provisions relate to listed matters (which are rather extensive),[113] and such provisions may be overridden by subsequent legislation.[114] In some other jurisdictions, treaties automatically prevail over all domestic law except for the national constitution.[115] In relation to the matters considered in this paper, the assumption is made that in all cases the tax treaty prevails over domestic tax law.

A fundamental principle of international tax law is that a state's jurisdiction to tax is based on economic allegiance or 'an appropriate connecting factor'.[116] A connecting link or factor that is generally accepted to justify the taxation of a person (whether natural or artificial) is residence, where the taxpayer is most closely connected to the residence country. An alternative basis of economic allegiance arises where an economic activity giving rise to income is undertaken within the jurisdiction, so-called source based taxation, where the

[110] Peter Harris and David Oliver, *International Commercial Tax* (Cambridge University Press, 2010) 14.
[111] Most agreements are given the force of law by way of the *International Tax Agreements Act 1953* (Cth) s 5 (current agreements) or s 5A (earlier agreements).
[112] *International Tax Agreements Act 1953* (Cth) s 4.
[113] *Taxation (International and Other Provisions) Act 2010* (UK) ss 2, 6.
[114] Rachael Arning, 'Country Report: United Kingdom' in Guglielmo Maistro (ed), *The Meaning of 'Enterprise', 'Business' and 'Business Profits' under Tax Treaties and EU Tax Law* (IBFD, 2011) 569.
[115] See, eg, *La Constitution du 4 octobre 1958* [French Constitution of 4 October 1958] Title VI on Treaties and International Agreements, Art 55.
[116] Harris and Oliver, above n 110, 43.

income is most closely connected to the source country. The application of these principles means that most nations, including Australia and the UK, assert a jurisdiction to tax income derived by residents from all sources as well as the domestically sourced income derived by non-residents.[117]

Domestic laws have developed a variety of concepts of residence and source. With respect to corporations, residence is ordinary based on place of incorporation or, alternatively, the place of central management and control.[118] The OECD Model Article 4 builds on these concepts for treaty purposes. Source rules are decidedly more problematic. Harris and Oliver note that one issue is immediately apparent in the framing of the question: is the enquiry directed towards determining from where the income is sourced or from what activity is it sourced?[119] As noted by Vann, the judge-made source rules for sales of assets are particularly unsettled; not only have different rules developed (such as place of contract, place of transfer, and location of the asset) but there are often different rules for different asset types within a jurisdiction.[120] In the case of emission permits, the place of transfer and location of the asset arguably point to the registry on which the permit is recorded, where the registry would arguably be located where the server is maintained (usually within the jurisdiction operating the registry); however, there may be several servers and they may operate out of different locations. The place of contract is flexible and easily manipulated. One response to this uncertainty at a domestic level is to legislate source rules. However, if the sale of the asset occurs as part of a business activity carried on through a PE, for tax treaty purposes the profit would be considered to be derived through the PE (from what) and the location of the PE gives the source (from where) for the allocation of taxing rights. Another

[117] For example, see *ITAA 1997* s 6-5 and *Corporation Tax Act 2009* (UK) s 5 (*CTA 2009*).
[118] Harris and Oliver, above n 110, 59-60.
[119] Ibid 71.
[120] Richard J Vann, 'Taxing International Business Income: Hard-Boiled Wonderland and the End of the World' (2010) 2(3) *World Tax Journal* 291, 298.

response is Australia's treaty practice to negotiate for the inclusion of a Source of Income Article, which states that income, profits or gains derived by a resident of one state that may be taxed by the other state under one of the listed articles (including Article 7, business profits) is deemed to arise from sources there for the purposes of the treaty as well as domestic law.[121]

When these basic principles are applied to an entity resident in one state (residence-based taxation) that carries on income producing activities in a second state (source-based taxation), international economic double taxation can result.[122] Therefore, in order to achieve the objectives of tax policy, such as capital-import neutrality or capital-export neutrality,[123] and to eliminate international double taxation and encourage trade and investment, many jurisdictions have entered into bilateral tax treaties. As summarised by the United Nations:

> Broadly, the general objectives of bilateral tax treaties therefore include the protection of taxpayers against double taxation with a view to improving the flow of international trade and investment and the transfer of technology. They also aim to prevent certain types of discrimination as between foreign investors and local taxpayers, and to provide a reasonable element of legal and fiscal certainty as a framework within which international operations can confidently be carried on. … In addition, the treaties seek to improve cooperation between taxing authorities in carrying out their functions, including by them exchange of information with a view to preventing avoidance or evasion of taxes and by assistance in the collection of taxes.[124]

Double taxation is avoided through the allocation of taxing rights in relation to cross-border transactions and mechanisms for relief by way of credit for taxes paid or exemption. Tax

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[121] See, eg, *Convention between Australia and New Zealand for the Avoidance of Double Taxation with respect to Taxes on Income and Fringe Benefits and the Prevention of Fiscal Evasion*, Australia-New Zealand, signed 26 June 2009, [2010] ATS 10 (entered into force 19 March 2010) art 22. For a discussion of the origins of this and other distinctively Australian articles see C John Taylor, 'Some distinctive features of Australian tax treaty practice: An examination of their origins and interpretation' (2011) 9(3) *eJournal of Tax Research* 294.

[122] Double taxation can take the form of 'juridical' where an entity is subject to unrelieved taxation in more than one jurisdiction on the same income, and economic where different entities (such as the parent company and a subsidiary) are subject to tax on the same income. Juridical double taxation can take the form of residence-source (where one jurisdiction asserts the right to tax on a residence basis and a second on a source basis), residence-residence (where the taxpayer is considered a resident, as is taxed on that basis, in two jurisdictions) and source-source (where the income is considered sourced in two jurisdictions). See IBFD, *International Tax Glossary* (2015) 'double taxation'.

[123] A discussion of the economic/policy considerations influencing tax policy is beyond the scope of this paper. Traditional notions of capital import neutrality and capital export neutrality have been subject to criticism but still underlie arguments to avoid double taxation. See Harris and Oliver, above n 110, 89-91.

[124] *UN Model*, above n 20, vii.

treaties are generally based on either the OECD Model or, to a lesser extent, the UN Model.[125] The UN Model contains many provisions in common with the OECD Model but broadly grants greater taxing rights to source countries.[126] The country of source is generally given priority in taxation, with the country of residence having its taxing rights limited by the requirement to relieve potential double taxation by way of credit or exemption mechanisms. Transfer pricing regimes (both in domestic law and via tax treaties) also play an important role as a source rule for business profits.

Determining the taxation consequences of cross-border transactions will involve the application of the domestic tax law of the two states as well as the relevant bilateral tax treaty, with the goal of coordinating the application of these domestic tax laws so as to avoid double taxation. Given that domestic international tax laws in many respects now incorporate concepts from tax treaties, this section will start with an analysis of the OECD Model (also noting comparisons to the UN Model) and then move on to Australian and UK domestic law. For the purposes of this paper, the scope of the analysis will be restricted to the taxation of enterprises in corporate form and will highlight special rules in relation to arrangements involving PEs. Many complex issues arise in relation to the interpretation and application of tax treaties and the relevant domestic law and this paper does not attempt to comprehensively address them. Instead, this summary merely provides the necessary foundation for the analysis of the permit trading hypotheticals that follow.

The OECD Model

The history of the OECD Model can be traced back to the League of Nations and it was during this early phase that many of the fundamental principles, such as the taxation of

[125] Ibid.
[126] *UN Model*, above n 20, ix [12] 'Introduction'.

business profits and the arm's length rule, were first developed.[127] The OECD issued its first Model Tax Treaty in 1963 and included then, as the Model still does today, detailed Commentary on the Articles.[128] These Commentaries can be a valuable resource when issues of treaty interpretation arise that require recourse to supplementary materials.[129]

The OECD Model has undergone significant revision from time to time and from 1992 has been the subject of periodic updates, the most recent being in July 2014.[130] The OECD Model is best suited for developed economies so, in order to facilitate treaties with developing countries, the 1980 UN Model, which is based on the OECD 1977 Model but with some significant differences, was released. The OECD Model, along with the UN Model, has been very successful and it is estimated that there are now upwards of 3000 bilateral tax agreements in place across the globe.[131]

For the purposes of this paper, the focus is on the current OECD Model, but it must be noted that any particular tax treaty may vary from the Model, either because it was based on an earlier version of the Model and/or due to the negotiating states' treaty practices being at variance to the Model (for example, Australia's Source of Income Article is not part of the Model). Caution should be exercised especially when significant updates have been adopted recently, as is the case with the 2010 update to Article 7 (business profits) discussed below.

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[127] Richard J Vann, 'Writing Tax Treaty History' (Research Paper No 10/19, Sydney Law School Legal Studies, 2011) <http://ssrn.com/abstract=1788603>.
[128] *OECD Model*, above n 19.
[129] *Vienna Convention on the Law of Treaties*, opened for signature 23 May 1969, 1155 UNTS 331 (entered into force 27 January 1980) art 32. The High Court of Australia accepted the relevance of both the *OECD Model* and the Commentaries in interpreting the provisions of any specific tax treaty. *Thiel v Federal Commissioner of Taxation* [1990] HCA 37; (1990) 171 CLR 338. See also Commissioner of Taxation, Australia, *Taxation Ruling 2001/13 Income tax: Interpreting Australia's Double Tax Agreements* (ATO 2001) [101] – [111] for further consideration.
[130] *OECD Model*, above n 19.
[131] HM Revenue & Customs, *Double Taxation Treaties* <http://www.hmrc.gov.uk/taxtreaties/tax treaty.htm>.

Article 7: Business profits

With respect to the taxation of emission permit transactions, the hypotheticals analysed below in Part 5 contemplate transfers within a corporate enterprise, which may or may not involve a PE, such that Article 7 of the OECD Model, the business profits article, is most relevant but Article 13 (Capital Gains) could in some cases also be important. As expressed in Article 7(1), with regard to the allocation of taxing rights in relation to business profits, the state of residence (the home state) is given sole taxing rights in relation to the profits of an enterprise unless business is carried on through a PE in the other state, in which case the other (source or host) state also has taxing rights:

> 1. Profits of an enterprise of a Contracting State shall be taxable only in that State unless the enterprise carries on business in the other Contracting State through a permanent establishment situated therein. If the enterprise carries on business as aforesaid, the profits that are attributable to the permanent establishment in accordance with the provisions of paragraph 2 may be taxed in that other State.[132]

So where there is a PE, both the residence and source countries have the right to tax the attributable profits (whether they do or not and when are determined under domestic law). However, the first (residence) state must relieve any double taxation by either exemption (under Article 23A) or by providing a credit for the tax paid in the other (source) state (under the alternative Article 23B). A similar allocation of taxing rights can be found in the UN Model Article 7(1). The effect is to give the host state priority taxing rights.

An analysis of those activities that may constitute a PE under the meaning given to that concept under Article 5 is outside the scope of this paper but a threshold requirement of Article 5(1) is that there is a fixed place through which the business of the enterprise is carried on (so a PE must be carrying on business). This concept is extended to also include a dependent agent PE (Article 5(5), sometimes referred to as a 'deemed PE') and, under an

[132] *OECD Model*, above n 19, art 7(1).

optional paragraph added to the OECD Model Commentary in 2008, a services PE.[133] The UN Model Article 5 contains a broader definition of a PE and may pick up activities which would not be a PE under the OECD Model, for example a building site that lasts longer than six months is a PE under the UN Model, but a building site that otherwise meets the PE definition will only be a PE under the OECD Model if it lasts more than twelve months. The fact that an enterprise has a subsidiary or associate company in the jurisdiction does not prevent the finding of a PE. For example, some of the activities of a subsidiary company could constitute an agency PE of the parent company. It has been argued that in most cases there will be no net profits attributable to the PE due to the operation of the arm's length pricing rule,[134] but the OECD has suggested that in some circumstances it is possible for profits to be attributed to the dependent agent PE of the parent,[135] as distinct from the profits earned by the dependent agent as a subsidiary/enterprise.

There has been renewed international interest in the treaty definition of a PE as part of the OECD's Base Erosion and Profit Shifting (BEPS) Action Plan.[136] The OECD recognises the critical importance of this test and Action 7 of BEPS has focussed on the artificial avoidance of PE status. The OECD's final report on Action Item 7 proposes to tighten up the Article 5 definition through amendments to Article 5 and the associated Commentary and by the inclusion of a new anti-fragmentation rule.[137] The Report also suggests that these

[133] *OECD 2014 Model: Commentary on Article 5*, above n 19, [42.23].
[134] See Richard J Vann, 'Tax Treaties: The Secret Agent's Secrets' (2006) 3 *British Tax Review* 345 and Jacques Sasseville and Richard Vann, 'Article 7: Business Profits' in *Global Tax Treaties Commentaries* (IBFD, 2014) [4.2.8.1.2].
[135] OECD, *2010 Report on the Attribution of Profits to Permanent Establishments* (OECD, 2010) ('*2010 Attribution Report*') [234].
[136] OECD, *Action Plan on Base Erosion and Profit Shifting* (2013).
[137] OECD, *Preventing the Artificial Avoidance of Permanent Establishment Status, Action 7 – 2015 Final Report* (2015).

amendments may have flow on consequences for the attribution of profits to PEs under Article 7 and that additional guidance may be provided by the end of 2016.[138]

Given that the existence of a PE is a question of fact, in order to ensure that the analysis in this paper is comprehensive, the trading scenarios considered in Part 5 take into account alternatives of whether the entity does or does not have a PE without trying to describe the various arrangements that may or may not meet the definition. It has been asserted that, in most countries, the mere passive holding of an investment will not constitute the carrying on of a business and therefore will not be a PE.[139] Therefore, the mere maintenance of an ETS registry account in a jurisdiction will not ordinarily constitute a PE. However, if permit trading activities are engaged in or if the permits are held in relation to some broader business activity, there could be a PE.

Where business is carried on through a PE, the critical issue is the determination of the profits attributable to the PE, which thereby sets the limit or cap on the profits that the source (host) state may tax under Article 7[140] and with respect to which relief from double taxation must be provided by the home state. However, this does not determine whether or nor, or to what extent or when, these profits, revenues and expenses are recognised under the domestic law of either of the two states.[141] Sasseville and Vann note that the OECD has 'never clearly resolved' the relationship between Article 7 and domestic law or the nature of the any 'interference' with domestic law, and suggest that two separate calculations are involved: the calculation of attributable profits under the tax treaty that sets a cap on source state taxation and a 'completely different calculation under domestic law that applies subject

[138] Ibid 11.
[139] Harris and Oliver, above n 110, 137.
[140] *2010 Attribution Report*, above n 135, [9].
[141] Sasseville and Vann, above n 134, [5.1.4].

to the limit.'[142] This two-step approach has been adopted in this paper to provide a framework for the consideration of the scenarios in Part 5 where there is a PE. The starting point or first calculation is therefore the Article 7 limit.

The question of profit attribution to PEs has been the subject of extensive consideration by the OECD and commentators and, even though the OECD had produced lengthy Commentary in relation to Article 7, it has always been the case that there has been considerable variation in the interpretation of the Article. This, coupled with the desire to extend the principles of the OECD's Transfer Pricing Guidelines[143] to PEs, lead to an extensive review of the issues by the OECD and, ultimately, to the 2008 *Report on the Attribution of Profits to Permanent Establishments* (the 2008 Attribution Report) put forth a new version of the Commentary to Article 7 and adopted a preferred approach referred to as the 'functionally separate entity' approach.[144] These principles were incorporated into a revised version of Article 7 in 2010 in conjunction with changes to the Commentary and the release of a revised version of the report on PE attribution, the 2010 *Report on the Attribution of Profits to Permanent Establishments* (the 2010 Attribution Report), that refers to the new wording of Article 7.[145] The current Model states at Article 7, paragraph 2, the following:

> 2. For the purposes of this Article and Article 23A/23B, the profits that are attributable in each Contracting State to the permanent establishment referred to in paragraph 1 are the profits it might be expected to make, in particular in its dealings with other parts of the enterprise, if it were a separate and independent enterprise engaged in the same or similar activities under the same or similar conditions, taking into account the functions performed, assets used and risk assumed by the enterprise through the permanent establishment and through the other parts of the enterprise. [146]

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[142] Ibid.
[143] OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (2010). These Guidelines were originally approved by the OECD Council in 1995 and were substantially revised in 2010.
[144] OECD, *Report on the Attribution of Profits to Permanent Establishments* (2008) ('*2008 Attribution Report*'). See Sasseville and Vann, above n 134, [1.2.3.2].
[145] *2010 Attribution Report*, above n 135. The *2010 Attribution Report* is based on the OECD's *2008 Attribution Report*. The conclusions from the *2008 Attribution Report* have not changed in the *2010 Attribution Report* but amendments were made to align the language of the *2010 Attribution Report* to the updated version of Article 7 and the associated Commentary in 2010: *2010 Attribution Report*, above n 135, [4] – [6].
[146] The reference in a particular bi-lateral treaty will contain either a reference to the art 23A exemption or art 23B credit method for eliminating double taxation, as determined by the parties.

This 'authorised' OECD approach (the AOA) is now reflected in the updated Commentary. The functionally separate entity approach relies on two fictions: one, that the PE is a separate entity, and two, that it is independent from the rest of the enterprise.[147] According to the Commentary, this rule does not allocate part of the profits of the enterprise as a whole to the PE but operates to calculate what the profits of the PE would have been had it been a separate and independent enterprise.[148] As a consequence, a PE could be allocated profits where the enterprise as a whole makes a loss.[149] This is in contrast to the 'relevant business activity' approach adopted by several jurisdictions including Australia that, based on the pre-2010 version of Article 7, attributes actual income and expenses and does not recognise notional intra-enterprise transactions (this approach is discussed in greater detail below). Another point that warrants mention is that the fact that an enterprise carries on business through a PE does not mean that all income sourced from that host state is automatically attributed to the PE; that is, the force of attraction principle does not operate under the OECD Model.[150]

The profit attribution process under the AOA is envisaged in two steps in the Article 7 Commentary,[151] with further elaboration in 2010 Attribution Report.[152] First is a functional and factual analysis whereby the attributes of the PE (functions, economic ownership of assets, risks assumed, etc) and its rights and obligations with respect to transactions are determined.[153] The 2010 Attribution Report provides additional detail regarding the application of this analysis and, in the context of the attribution of assets, states that all relevant facts and circumstances should be examined to determine 'the extent to which the assets of the enterprise are used in the functions performed by the PE and conditions under

[147] *OECD 2014 Model: Commentary on Article 7*, above n 19, [16].
[148] Ibid [17].
[149] Ibid. The *2010 Attribution Report* notes that in applying the authorized OECD approach, references to profits should be taken to also apply to losses: *2010 Attribution Report*, above n 135, [3].
[150] *OECD 2014 Model: Commentary on Article 7*, above n 19, [12].
[151] *OECD 2014 Model: Commentary on Article 7*, above n 19, [20].
[152] *2010 Attribution Report*, above n 135.
[153] *OECD 2014 Model: Commentary on Article 7*, above n 19, [21].

which the assets are used' and therefore the economic ownership of the assets.[154] The mere identification of permits being held on a registry in the host state will not itself determine that those permits are attributed to a PE in that state.

Secondly, the relevant transactions and dealings are quantified or priced.[155] This analysis will pick up two categories of transactions and dealings: transactions between the enterprise and associated enterprises that are attributable to the PE and dealings between the PE and other parts of the enterprise of which the PE is a part.[156] The second category of dealings cannot be described as transactions, given that an enterprise cannot transact with itself—as noted in the Commentary, these dealings can have no legal consequences.[157] According to the OECD Commentary, the Transfer Pricing Guidelines developed for the purposes of Article 9 are applied directly to price the real transactions with associates and by analogy to the intra-enterprise dealings.[158] In effect, dealings between the head office (or another part of the enterprise) and the PE are re-characterised and priced as arm's length transactions. This can have consequences for allocating profits from the cross-border movement of permits where an emission permit is 'transferred' from the head office to a PE (or vice versa) and then sold or surrendered. In the 2010 Attribution Report, this is referred to as a 'change in use' of an asset.[159]

The analysis in the 2010 Attribution Report addresses changes in use of tangible assets as well as intangible assets. Although emission permits are technically intangible assets, that term is used in the 2010 Attribution Report as a reference to intellectual property,

[154] *2010 Attribution Report*, above n 135, [18].
[155] *OECD 2014 Model: Commentary on Article 7*, above n 19, [22].
[156] Ibid [22] and [24].
[157] Ibid [25].
[158] Ibid [22].
[159] *2010 Attribution Report*, above n 135, [194].

as evidenced by the references to royalties and licencing agreements.[160] As a result, the treatment of tangible property is arguably more analogous and the 2010 Attribution Report suggests the use of fair market value at the time of transfer.[161]

Dziurdz has argued that, conceptually, there should be no difference in the application of the arm's length principle to PEs and to associated companies (that is, under Articles 7(2) and 9, respectively).[162] This is especially, as pointed out by Vann, when one considers that the choice of PE or subsidiary form is within the power of the enterprise.[163] However, Dziurdz suggests that as Article 9 focuses on legally binding contracts whilst Article 7(2) looks to other criteria (functions, assets and risks) before valuing dealings, differences can arise.[164]

The OECD's 2008 Attribution Report acknowledges that a number of alternative approaches to the attribution of profits to PEs had developed based on the earlier version of Article 7[165]. Before 2010, Article 7 read:

> 1. The profits of an enterprise of a Contracting State shall be taxable only in that State unless the enterprise carries on business in the other Contracting State through a permanent establishment situated therein. If the enterprise carries on business as aforesaid, *the profits of the enterprise may be taxed* in the other State but *only so much of them* as is attributable to that permanent establishment.
>
> 2. Subject to the provisions of paragraph 3, where an enterprise of a Contracting State carries on business in the other Contracting State through a permanent establishment situated therein, there shall in each Contracting State be attributed to that permanent establishment the profits which it might be expected to make if it were a *distinct and separate enterprise* engaged in the same or similar activities under the same or similar conditions and dealing wholly independently with the enterprise of which it is a permanent establishment. (emphasis added)

The various approaches to profit attribution have been broadly grouped together as either a 'relevant business activity' approach or a 'functionally separate entity' approach.[166]

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[160] Ibid [194] – [210].
[161] Ibid [196].
[162] Kasper Dziutdz, 'Attribution of Functions and Profits to a Dependent Agent PE: Difference Arm's Length Principles under Article 7(2) and 9?' (2014) 6(2) *World Tax Journal* 135 at 138.
[163] Vann, 'Taxing International Business Income', above n 120, 325.
[164] Dziurdz, above n 162, 142.
[165] *2008 Attribution Report*, above n 144, [60].

According to the relevant business activity approach, a common variant known as the 'single enterprise' approach, the 'profits of the enterprise' referred to in Article 7(1) only includes the profits of the business activity in which the PE participates (so called 'channel profits'), so that Article 7(1) effectively limits the profits that can be attributed under Article 7(2) to the profits earned by the enterprise from the activity. This approach relies on the enterprise (of which the PE is merely a part) as the taxpayer such that income or profits can only be earned through transactions with third parties and notional dealings within the enterprise are ignored.[167] Under some interpretations, the profits attributable to the PE (as a distinct and separate enterprise but only assuming limited independence) could not be greater than the profits of the enterprise as a whole (global profits) and the PE could have no profits if the enterprise realised an overall loss.[168] Variations of the relevant business activity approach have been adopted by a number of countries, including Australia, and its implications are considered below.

In comparison, the functionally separate entity approach does not view Article 7(1) as a limitation on the attributable profits and instead determines the profits that the PE would have earned had it been a distinct and separate enterprise and applying the arm's length principle to any dealings with associates.[169] By recognising dealings between the PE and other parts of the enterprise, the PE could be deemed to earn profits from these dealings even if the transactions between the enterprise and third parties produce an overall loss.[170] Such an approach can also have an impact of the timing of realisation of profits.[171]

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[166] Ibid [59] – [79].
[167] Roberto Bernales, 'The Authorized OECD Approach: An Overview' in Carlos Gutiérrez and Andreas Perdelwitz (eds), *Taxation of Business Profits in the 21st Century: Selected Issues under Tax Treaties* (IBFD, 2013) [6.2.2].
[168] Ibid.
[169] *2008 Attribution Report*, above n 144, [69].
[170] Bernales, above n 167, [6.2.2].
[171] *2008 Attribution Report*, above n 144, [70].

The 2008 Attribution Report concluded that the functionally separate entity approach was preferable from a number of perspectives and this authorised approach is now reflected in the new Article 7 and the 2010 Commentary. Where a specific tax treaty has an Article 7 based on the pre-2010 version, or was entered into before the 2008 amendments to the Commentary, the earlier treaty practice in relation to profit attribution can continue to be applied but it has also been suggested that the AOA could be adopted as a matter of interpretation on the basis that the 2008 changes to the Commentary merely served to clarify its existing meaning rather than to modify it.[172] It would be difficult for party to a new tax treaty incorporating the new Article 7 to in practice deviate from the AOA. However, the uptake of the new Article 7 has not been consistent, even amongst OECD member states.[173]

The UN Committee of Experts on International Cooperation in Tax Matters specifically declined to adopt the 2010 update to the OECD Model Article 7 and the UN Model Article 7 continues to reflect the pre-2010 version.[174] The UN Model Article 7 also includes a limited force of attraction principle (such that the profits attributed to a PE will include income from similar sales and other business activities even though not conducted through the PE) and also contains a more extensive paragraph 3 that denies the PE deductions with respect to enumerated expenses paid to the head office. The variations would usually have the effect of increasing the profits attributable to the source country.

Reference must also be made to the OECD Model Article 9 (associated enterprises). Where enterprises are associated as described in the Article, authority is given to increase

[172] See Ola van Boeijen-Ostaszewska, 'The Applicability of the AOA to Existing Tax Treaties – A Matter of Interpretation?' in Carlos Gutiérrez and Andreas Perdelwitz (eds), *Taxation of Business Profits in the 21st Century: Selected Issues under Tax Treaties* (IBFD, 2013).
[173] See Bart Kosters and René Offermanns, 'Implementation of the Authorized OECD Approach by OECD Member Countries' in Carlos Gutiérrez and Andreas Perdelwitz (eds), *Taxation of Business Profits in the 21st Century: Selected Issues under Tax Treaties* (IBFD, 2013).
[174] *UN Model*, above n 20, 3.

income or disallow expenses, to 're-write the accounts',[175] to reflect the arm's length profit that would have arisen between independent parties. Details of a variety of acceptable methodologies for undertaking this pricing are provided in the OECD Transfer Pricing Guidelines.[176] The guiding standard is the arm's length principle[177] where members of the multinational group are treated as independent, unrelated entities. In the case of emission permits, which are much like commodities (that is, regularly traded among independent entities on a liquid market whereby a market price is easily determined), the comparable uncontrolled price (CUP) method would likely operate to substitute that market price (the uncontrolled price) for a different transfer price.[178] As noted in the Guidelines, in cases where the contract features were significantly different, that price could be adjusted so that it would then be comparable[179] but transactions for the sale of emission permits are likely to be relatively standard. The UN Model also endorses the arm's length standard in its respective Article 9 and the Commentary states that the former UN Group of Experts determined in 1999 that OECD Transfer Pricing Guidelines should be followed.[180] Although the UN Commentary states that this issue has not been fully reconsidered, the UN Practical Manual for Transfer Pricing seeks to be generally consistent with the OECD Guidelines and adopts a similar approach to the comparability analysis and the same pricing methods.[181]

[175] *OECD 2014 Model: Commentary on Article 9*, above n 19, [2].
[176] OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (2010) ('*TP Guidelines*').
[177] Ibid 31.
[178] Ibid 64-5.
[179] Ibid.
[180] *UN Model*, above n 20, 171.
[181] United Nations, *UN Practical Manual on Transfer Pricing for Developing Countries* (2013) vii, ch 5 and 6.

Article 13: Capital Gains

There may also be circumstances where, under domestic law, emission permits are characterised as capital assets, which could involve Article 13 of the OECD Model (capital gains). Relevantly, Article 13(2) states as follows:

> Gains from the alienation of movable property forming part of the business property of a permanent establishment which an enterprise of a Contracting State has in the other Contracting State…may be taxed in that other State.

This same rule operates under the UN Model Article 13(2).[182] The OECD Commentary to Article 13 was recently updated to include emission permits as an example of incorporeal property that would be movable property.[183] Therefore, under Article 13(2), if permits form part of the business property of a PE of a resident of Country A in Country B, those capital gains may be taxed in Country B, providing a similar result with respect to taxing rights to that under Article 7. Article 13(1), which deals with immovable property (such as land), provides more broadly that gains derived by a resident of one Contracting State from the alienation of such property that is situated in the other Contracting State may be taxed in that other State, providing a similar result to Article 13(2) but without requiring a link to a PE. Finally, Article 13(5) provides that gains from the alienation of property not otherwise dealt with shall be taxable only in the state of residence. Whether and how capital gains in any given case are calculated and taxed is determined under domestic law.[184] In 2007, Csikos concluded that profits from the alienation of permits fell under Article 13, in part based on a conclusion that such income was not connected to the ordinary course of business of the enterprise.[185] It is suggested that such transactions would more often be viewed as part of the ordinary course of business, given that the permits would either be acquired as part of the

[182] *UN Model*, above n 20. Article 13 is broadly consistent with the *OECD Model* but contains some additional features to address specific concerns of developing nations.
[183] *OECD 2014 Model: Commentary on Article 13*, above n 19, [24].
[184] Ibid [3].
[185] Katalin Csikos, 'International Tax Implications of Tradable Permits' (2007) *European Taxation* 135,139.

enterprise's activities to manage its compliance obligations or for the purposes of trade, and either of these activities would be integral parts of the business operations.

Recognising the potential for issues to arise under tax treaties in relation to emission permits, the OECD Committee on Fiscal Affairs issued a report in 2014 that canvassed the possible issues (the Emissions Permits Report)[186] and the Commentary to the OECD Model has been amended to include references to permits.[187] The most obvious issue is the most appropriate Article of the OECD Model to determine the taxing rights in relation to profits and losses derived from transactions involving the sales of permits and the Emissions Permits Report suggests that for most business activities this will be either Article 7 or Article 13. Although the Commentary to Article 13 confirms the view that the taxation of a PE in relation to a capital gain must be 'in accordance with' Article 7,[188] it also states that Article 13 does not specify how the capital gain is computed as this is left to domestic law,[189] where this can be distinguished from the detailed approach to profit calculation under Articles 7 and 9. Nevertheless, on the view that they operate in broadly the same fashion, the OECD concluded that 'there is no need to determine whether the taxing rights, in such cases, arise from Article 7 or Article 13, as any difference of views on this issue will not have practical consequences.'[190] In 2012, the UN Committee of Experts on International Cooperation in Tax Matters also issued a discussion note (UN Committee of Experts Note) canvassing similar issues, but with greater emphasis on the perspectives of developing countries, and came to largely consistent conclusions, especially in relation to the application of Articles 7 and 13.[191] This paper analyses emission permit transaction on the basis that Article 7 applies and does

[186] OECD Committee on Fiscal Affairs, *Tax Treaty Issues*, above n 60.
[187] *OECD 2014 Model: Commentary on Article 6*, above n 19, [2.1] and *OECD 2014 Model: Commentary on Article 7*, above n 19, [75.1].
[188] *OECD 2014 Model: Commentary on Article 13*, above n 19, [10].
[189] Ibid [12].
[190] OECD Committee on Fiscal Affairs, *Tax Treaty Issues*, above n 59, [34].
[191] United Nations, Committee of Experts on International Cooperation in Tax Matters, *Note on Tax Treaty Issues arising from the Granting and Trading of Emissions Permits and Emissions Credits under the UN Model Tax Convention* (2012) E/C 18/2012/CPR 6 ('*UN Note*').

not separately undertake the Article 13 analysis on the basis of the OECD conclusions that the consequences for taxation would generally be the same.

Offset permits from land based activities and Article 6

Another issue raised in the Emissions Permits Report and discussed in greater detail in the UN Note is the potential application of Article 6 (income from immovable property) to certain emission permits. Both the OECD Model and the UN Model state that 'income derived by a resident of a Contracting State from immovable property (including income from agriculture and forestry) situated in the other Contracting State may be taxed in that other State.'[192] The meaning of the term 'immovable property' given by the OECD Model starts with the law of the state where the property is situated (and in many tax treaties the term 'real property' is used instead) but then incorporates certain inclusions and exclusions. Unlike Articles 7 and 13(2), Article 6 does not require that there be PE for the source country to have taxing rights – the nexus between the income and the immovable property provides a 'very close economic connection'[193] sufficient to support source taxation rights. Article 13(1) provides the same source taxation rights with respect to gains from the disposal of immovable property that Article 6 provides for income from such property. As a consequence, the residence country is required to provide relief from double taxation under Article 23 in the way of credit or exemption whether or not the property would be classified as immovable property under the law of the state of residence.[194]

One of the issues raised in both the OECD and UN papers is whether emission permits could be classified as immovable property under the treaty such that the profits on sale would be taxable in the state where the permits are located regardless of the residence of

[192] *OECD Model*, above n 19, art 6(1).
[193] *OECD 2014 Model: Commentary on Article 6*, above n 19, [1].
[194] OECD Committee on Fiscal Affairs, *Tax Treaty Issues*, above n 59, [36].

the holder. This could be the case if the permits were 'bound' to a specific location, installation or project.[195] Although the OECD did not identify any jurisdictions that would treat emission permits as immovable property,[196] an alternative suggested by the UN Committee of Experts Note is that the permits could arguably be 'property accessory to immovable property' if granted with respect to that property,[197] and therefore caught by the Article 6(2) specific inclusion. The UN Committee of Experts Note discusses the negative impacts that the characterisation of emission permits as immovable property could have on tax treatment as well as the efficiency and liquidity of the permit market and suggests that the Commentary to Article 6 could be amended to recommend that countries do not characterise permits as immovable property.[198] However, given that the application of Article 6 is not controlled by domestic law, such a policy may not resolve the issue.

In the model tax treaties, Article 6(1) includes income from agriculture and forestry. The 2014 update to the OECD Commentary on Article 6 makes the point that it could be argued in some cases that the acquisition or trading in emission permits is 'an integral part' of agricultural or forestry activities such that the income derived from these dealings would be picked up by Article 6(1).[199] For example, free permits issued under offset programs could be characterised as income from agriculture or forestry.[200] The UN Note specifically discusses Certified Emission Reductions (CERs) issued under the Clean Development Mechanism,[201] but many jurisdictions with ETSs have also set up land-based offset regimes.

[195] Ibid [35].
[196] Ibid [39].
[197] *UN Note*, above n 191, [105].
[198] Ibid [108] and following recommendation.
[199] *OECD 2014 Model: Commentary on Article 6*, above n 19, [2.1] (inserted in 2014).
[200] This is the approach taken in Australia with respect to Australian Carbon Credit Permits issued under the Carbon Farming Initiative Scheme.
[201] *UN Note*, above n 191, [131].

In practice, Article 6 could potentially apply to income from certain land-use offset projects under circumstances where Article 7 would not also be applicable. Under the California-Quebec linked scheme, for example, emitters may meet up to 8% of their compliance obligations by way of offset permits.[202] The California Air Resource Board has issued compliance offset protocols for projects involving forestry, manure biogas capture and destruction, destruction of ozone depleting substances (ODS), mine methane capture and urban tree planting.[203] Quebec's cap-and-trade regulation lists offset credit protocols for covered manure storage facilities, waste disposal sites (landfill) and ODS destruction.[204] Arguably all but the ODS projects could fit within the terms of Article VI(1) of the US-Canada tax treaty, which follows the same wording as the OECD Model Article 6(1) except for the use of 'real property' rather than immovable property,[205] on the basis that the free permits are income from immovable property or income from agriculture or forestry. It is considered that a multinational enterprise engaged in agriculture or forestry would in most instances have a PE or subsidiary in the state where the property is located and through which the activity is carried out (so that the same right to tax at source would be granted under either Article 6 or Article 7). However, it is possible that the activities involved in reforestation or avoided deforestation, California's mine methane capture projects (which can relate to abandoned underground coal mines) and Quebec's landfill projects (which can relate to closed landfills), would not necessarily be associated with an ongoing business activity and may not be a PE through which a business of the non-resident is carried on for Article 7 purposes.

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[202] California Code of Regulations, Title 17, subch 10, Art 5 California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms § 95854.
[203] California Environmental Protection Agency, Air Resources Board, *Compliance Offset Program* <http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>.
[204] Quebec Environment Department, *The Carbon Market: Issuance of offset credits* <http://www.mddelcc.gouv.qc.ca/changements/carbone/credits-compensatoires/index-en.htm>.
[205] *Convention between the United States of America and Canada with respect to taxes on income and on capital*, United States-Canada, opened for signature 26 September 1980, I-24903 signed 26 September 1980, protocol signed 14 June 1983, protocol signed 28 March 1984, protocol signed 17 March 1995, protocol signed 29 July 1997 (entered into force 16 August 1984).

In summary

This section has outlined the issues most likely to arise from the operation of a tax treaty in relation to cross-border permit transactions. In most instances, the ability of the source/host country to exert taxation rights in relation to these transactions will be governed by Article 7 of the OECD Model. If the activities of the enterprise do not amount to a PE, pursuant to Article 7 the right to tax will rest with the home state. If the enterprise has a PE in the source state and the permit transaction occurs through the PE as part of the business it carries on, the source state may tax the profit attributable to those activities of the PE. Whether and how the host jurisdiction will actually tax the profits attributable to the PE is a matter of the domestic law of that state. The residence state has the obligation to relieve any double taxation on these attributable profits under Article 23.

The PE profit attribution rules in Article 7 of the OECD Model were amended in 2010 along with the associated Commentary to adopt a functionally separate entity approach (the AOA) as the preferred approach to profit attribution, whereby assets and activities are attributed to the PE and then transactions (real and notional) are priced, in some cases with reliance on the transfer pricing rules that have been developed for Article 9. The UN and several OECD members, including Australia, have not adopted this approach but rather continue to rely on their interpretations of the pre-2010 version of Article 7. In contrast to the AOA, other approaches known under the umbrella term of the relevant business activity approach seek to attribute the actual profits (income and expenses) of the business activity of the enterprise to the PE or other relevant parts of the enterprise and do not recognise notional transactions. Arm's length pricing will also inform this process.

Article 13 could also apply if permits are characterised as capital assets but both the OECD and the UN tax committees concluded that such an approach would not give rise to

any practical difference to an analysis under Article 7. In certain circumstances there may be an argument that Article 6 could apply to emission permits, allowing the source state to tax even when there is no PE, but given that these situations would be unusual, this paper will only examine further the application of Article 7.

Relevant Domestic Tax Rules

This next section outlines the relevant domestic tax rules for international transactions that could be triggered by cross-border emission permit transfers. The UK was selected as a representative jurisdiction given that it participates in the EU ETS but relies on its ordinary taxation rules in relation to permit transactions. In addition, there are indications (described below) that the UK is moving towards adopting the AOA for domestic law purposes. Australia provides a contrasting approach given that the special tax regime for permits includes specific rules that are triggered on cross-border transfers and Australia continues to apply a relevant business entity approach to PE attribution. In each case, the basic jurisdictional rules regarding business income and capital gains will be noted before going on to the rules for attribution of profits to PEs. The discussion is limited to businesses carried on in corporate form.

UK Domestic Tax Rules

The *Corporation Tax Act 2009* (UK) (CTA 2009) asserts jurisdiction to tax corporate profits on a basis consistent with the general norms of international tax. A UK resident company, defined as a company incorporated in the UK[206] or a company that has its central management and control in the UK,[207] is subject to corporation tax on profits 'wherever

[206] *CTA 2009* s 14.
[207] This case law rule for residence was the residence test for companies until amendments to the *CTA* in 1988 that inserted the incorporation test. See *De Beers Consolidated Mines Ltd v Howe* [1906] AC 455. A transitional exception rule may still have application to some companies incorporated in the UK as at the time of the

arising' whilst a non-UK resident company[208] is only subject to corporation tax if it carries on trade (activities of a commercial nature equivalent to business[209]) in the UK through a PE and only in relation to those profits that are attributable to the PE.[210] A specific attribution rule operates to define a PE's chargeable profits, including trading income, income from property used by the PE and chargeable gains from the disposal of assets used by the PE.[211] Other non-business income such as interest and dividends derived by a non-resident company may still be subject to tax but will be chargeable under the income tax rather than the corporation tax.[212]

The CTA 2009, as amended in 2011, adopts a separate entity approach to the attribution of chargeable profits to a UK PE of a non-UK resident company, where the PE is deemed to be a 'distinct and separate enterprise'[213] and it is assumed that the PE is dealing wholly independently and at arm's length with respect to any dealings between any part of the non-resident UK company and the PE.[214] This suggests that the UK domestic tax law has substantially adopted the basic principles of the AOA with respect to UK PEs.[215]

With respect to UK resident companies, foreign tax is creditable against UK taxes, including the corporation tax, under the *Taxation (International and Other Provisions) Act*[216] but is limited by the amount of corporation tax that would have been payable on that income

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amendments but that have their central management and control in another jurisdiction. *CTA 2009* sch 2, cl 11. See HMRC International Manual INTM120050.

[208] *CTA 2009* s 18 provides that a company that, for the purposes of a DTA, is treated as non-UK resident is so treated for the purposes of the *CTA 2009*.

[209] The meaning of 'trade' under UK tax law as compared to 'business' is considered in Arning, above n 115, [18.2]. For the purposes of the tax analysis in this paper, it is assumed that the terms are interchangeable.

[210] *CTA 2009* s 5.

[211] *CTA 2009* s 19.

[212] John Tiley and Glen Loutzenhiser, *Advanced Topics in Revenue Law: Corporation Tax; International and European Tax; Savings; Charities* (Hart Publishing, 2013) 39.

[213] *CTA 2009* s 21.

[214] See *CTA 2009* s 22 regarding transactions generally and s 23 regarding the provision of goods or services by the non-resident company to the UK-based PE.

[215] Kosters and Offermanns, above n 173, [11.3.2].

[216] *Taxation (International and Other Provisions) Act 2010* (UK) s 18 (*TIOPA 2010*).

and chargeable gains.[217] As amended in 2011, the PE profit attribution rule is linked to this foreign tax credit limit. This rule assumes that the foreign PE is a distinct and separate enterprise dealing wholly independently with the company[218] and also imposes a capital attribution rule that, according to the HMRC, is based on the methodology authorised by the OECD in the 2010 PE Attribution Report.[219] These various provisions suggest a move towards the separate entity approach within the UK domestic law and recent UK treaty practice also suggests that the AOA is preferred.[220]

Also since 2011, a new exemption by election is available for profits and losses derived by the foreign PE of a UK resident company, where such profits and losses are ignored for the purposes of the CTA 2009.[221] The 'relevant profits amount' that is exempt is the amount of profits that would have been attributed to the PE under the alternative foreign tax credit system.[222] The exemption also applies to chargeable gains.[223] The UK company can either elect to have the profits attributable to the foreign PE treated as exempt (but then lose access to the PE's losses) or work out the company's chargeable profits and claim a foreign tax credit for taxes paid overseas in relation to the PE's profits.

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[217] Ibid s 42.
[218] Ibid ss 43(2) and (4).
[219] Ibid s 43(3). See INTM288020 – profits attributable to a permanent establishment of a UK resident company – TIOPA10/s43: the capital allocation result. See also Kosters and Offermanns, above n 173, [11.3.3].
[220] See, eg, *Protocol amending the Convention between the United Kingdom of Great Britain and Northern Ireland and the Federal Republic of Germany for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on income and on capital signed at London on 30 March 2010,* United Kingdom-Germany, signed 17 March 2014 (not yet in force); *Protocol amending the Convention between the United Kingdom of Great Britain and Northern Ireland and the Government of Canada for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on income and capital gains, signed at London on 8 September 1978, as amended by the Protocol signed at Ottawa on 15 April 1980, by the Protocol signed at London on 16 October 1985 and by the Protocol signed at London on 7 May 2003,* United Kingdom-Canada, signed 21 July 2014, T 6/2015 (not yet in force). But see *Convention between the United Kingdom of Great Britain and Northern Ireland and the Kingdom of Spain for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on income and on capital*, United Kingdom-Spain, signed 14 March 2013, TS 20/2015 (entered into force 12 June 2014), which includes the old Article 7.
[221] *CTA 2009* s 18A inserted by *Finance Act 2011* (UK) sch 13.
[222] Foreign tax credits are available under Chapter 1 of the *TIOPA 2010*.
[223] *CTA 2009* s 18B. This election is irrevocable. *CTA 2009* s 18F(1).

In relation to special rules for asset categories, Part 8 of CTA 2009 applies to intangible fixed assets. For these purposes, the term 'intangible asset' takes its meaning from accounting rules[224] and should in most cases include emission permits.[225] Part 8 also requires that the intangible asset is fixed, which is defined as acquired by the company for use on a continuing basis in the course of the company's activities.[226] This would seem to draw a distinction from inventory, although in the case of a company engaged in the business of trading in financial instruments, emission permits could be inventory. The treatment of intangible fixed assets under the CTA 2009 is comparable to the treatment of revenue assets for Australian tax purposes. In any event, Harris and Olivier note that a profit or loss realisation event for an asset requires a change of ownership under UK law and therefore a transfer of an asset in or out of a jurisdiction, such as a transfer to/from a PE, with nothing more, would not be recognised.[227] If there is a change of ownership between related companies, a market value substitution rule is triggered[228] but if the transfer is between group companies there is a rollover.[229]

The HMRC has provided analysis of the interaction of the PE and intangible fixed asset rules in its International Manual. As a general matter, if an asset is transferred from a UK head office to a foreign PE and then sold to a third party, the sale to the third party is the realisation point, so the profit or loss would be calculated then and considered for attribution to the PE:

> an earlier transfer of an asset within the company (between a foreign PE and the head office of the company, or between two PE's of the entity) will not have constituted a disposal for the purpose of UK

[224] *CTA 2009* s 712.
[225] By analogy, the HMRC has expressed the opinion that agricultural quotas are intangible assets to which Part 8 applies: HMRC, *Corporate Intangibles Research & Development Manual*, CIRD 10101. In addition, it is clear that such permits are intangible property. See *Armstrong DLW GMBH v Winnington Networks Ltd* [2012] EWCH 10 (Ch).
[226] *CTA 2009* s 713.
[227] Harris and Oliver, above n 110, 420.
[228] *CTA 2009* s 845.
[229] *CTA 2009* s 775.

> corporate tax on chargeable gains, but will need to be taken account of in the computation of the eventual disposal.[230]

This was stated to be relevant for assets subject to the chargeable gains regime as well as the intangible fixed assets regime. Although the UK domestic law and treaty practice has moved towards the AOA and therefore accepts notional transactions with respect to determining the attribution of profits of a PE, these comments suggest that the realisation requirement has not been overridden and notional transactions do not themselves give rise to chargeable profits. This is arguably a barrier to the full implementation of the AOA at the domestic level.[231]

Transfer pricing rules may also come into play and the UK tax law contains provisions to make transfer pricing adjustments based on the arm's length principle.[232] These provisions are to be interpreted in a way consistent with the OECD Model Article 9 and the 2010 OECD Transfer Pricing Guidelines, though the Guidelines will not override the legislation.[233]

Australian Domestic Tax Rules

Under its domestic tax law, Australia asserts the jurisdiction to tax residents on assessable income derived from all sources and to tax non-residents on Australian-sourced assessable income.[234] Assessable income is defined to include 'ordinary income'[235] (income under ordinary concepts) and case law holds that this includes income derived from carrying on business.[236] Profits and losses from the sale of current business assets (called revenue assets as profits and losses are recognised on revenue account) and capital assets will only be

[230] HMRC, International Manual, INTM282030.
[231] See generally Bernales, above n 167, [6.5.2].
[232] See *TIOPA 2010* Pt 4 applicable from 2010 onwards.
[233] *TIOPA 2010* s 164 and INTM412010 – Transfer pricing: legislation: rules: introduction.
[234] *ITAA 1997* ss 6-5 and 6-10.
[235] Ibid s 6-5.
[236] See, eg, *Californian Copper Syndicate v Harris* (1904) 5 Tax Cases 159; *Federal Commissioner of Taxation v Whitfords Beach Pty Ltd* [1982] HCA 8, (1982) 150 CLR 355; *Federal Commissioner of Taxation v Myer Emporium Ltd* [1987] HCA 18, (1987) 163 CLR 199.

derived when a realisation event occurs, which usually requires change in ownership, but changes in value of trading stock (inventory) may be recognised on an accruals basis by election.[237] Whether an emission permit is classified as trading stock, a revenue asset or a capital asset in the hands of a particular taxpayer is a question of fact that depends upon the relationship of the asset to the business carried on by the taxpayer. A gain or loss realised by a foreign resident with respect to a capital asset is disregarded unless the CGT asset is 'taxable Australian property'[238] where this term is defined to include a CGT asset that has been used in carrying on business through a PE in Australia.[239] However, special consequential amendments were made with the enactment of Division 420 to ensure that permits held on the Australian registry (REUs) would not be subject to tax under any of these alternative asset regimes—gains and losses will only be recognised through Division 420. However, if an emission permit is not held on the Australian Registry, it will not be an REU and the ordinary rules just described will have application.

The transfer of an asset such as an emission permit from an enterprise to a related company will be a realisation event and there are specific and general anti-avoidance rules that will substitute an arm's length price for the consideration otherwise specified between the parties.[240] The change in holding or use of an emission permit from one part of an enterprise, such as the head office, to a PE, would not be a disposal or change in ownership and therefore would not be a realisation event for tax purposes. However, Division 420 treats movements of emission permits on or off the Australian Registry (referred to as 'importing'

[237] Profits and losses from revenue assets are included in assessable income and allowable as a general deduction, respectively: see *ITAA 1997* ss 6-5 and 8-1. In the case of capital assets, the most common tax event giving rise to a recognition of gains or losses is CGT event A1, a change of ownership: *ITAA 1997* s 104-10. Profits and losses from sales of trading stock are taken into account for tax purposes by way of these general provisions and the cost accounting mechanism prescribed in Division 70, which allows trading stock to be carried at actual value or on a mark-to-market basis, thereby recognizing accrued by unrealized gains and losses.
[238] *ITAA 1997* s 855-10.
[239] Ibid s 855-15.
[240] In the case of trading stock, the arm's length substitution rule (*ITAA 1997* s 70-20) is only triggered where the consideration is greater than market value whilst in the case of CGT assets, market value is substituted if the parties did not deal with each other at arm's length (*ITAA 1997* ss 112-20 and 116-30).

and 'exporting' permits, respectively) as events for tax purposes. Specific attention will be given to the import and export rules in the consideration of the hypotheticals below in Part 5. In addition, Division 420 includes deemed source rules whereby the proceeds on sale of an REU and any increase in the rolling balance are deemed to be Australian sourced for the purposes of the income tax laws.[241]

Where cross border transactions are entered into, it is necessary to examine the interaction of the tax treaty and the domestic tax law. From a treaty perspective, it may be necessary to determine the extent to which profits are attributable to an Australian PE of a non-resident company in order to determine Australia's right to tax these profits or, alternatively, to determine the profits of an Australian company that are attributable to its foreign PE in order to determine Australia's obligations to provide relief from double taxation. Given that Australia's tax treaties are based on the OECD Model, consideration has been given to the question of whether Australia should adopt the AOA. In a 2013 Report, Australia's Board of Taxation highlighted what it saw as the critical differences between the pre-2010 and post-2010 approaches and observed that there had, to date, been a mixed response to the new Article 7, with a number of countries expressly reserving their position on the new Article.[242] The Australian approach, a relevant business activity approach based on the pre-2010 Article 7, is to allocate *actual* income and expenses to a PE using a functional analysis and arm's length principles.[243] What amounts to actual assessable income or actual allowable deductions is obviously a matter for Australian domestic tax law. The Board of Taxation noted that attribution under the current Australian approach does not

[241] *ITAA 1997* ss 420-25(3) and 420-45(4).
[242] Australian Government, Board of Taxation, *Review of Tax Arrangements Applying to Permanent Establishments: A Report to the Assistant Treasurer* (Commonwealth of Australia, 2013) [4.1] – [4.5]. Australia did not make a reservation to the new Article 7.
[243] Ibid [1.6], and see Commissioner of Taxation, Australia, *Taxation Ruling 2001/11 Income tax: international transfer pricing – operation of Australia's permanent establishment attribution rules* (ATO 2001) ('TR 2001/11').

exclude the consideration of internal dealings but that the AOA 'more explicitly and directly permits' such recognition.[244]

The stated purpose of the Board of Taxation enquiry was to provide an analysis of the advantages and disadvantages of Australia moving to the AOA in its treaty negotiations and domestic law. The Board of Taxation delivered its final report to the Government in April 2013 but it was only released to the public in June 2015.[245] In the meantime, Australia's transfer pricing rules (including the PE profit attribution rules) were replaced and modernised in 2013 but the Government acknowledged that, as at the time of the amendments, it had not yet decided whether to change its treaty practice so the new statutory rules reflect the traditional relevant business activity approach.[246] The final Board of Taxation report does not make any firm recommendations with regard to the general adoption of the AOA but suggests that the Government may wish to consider a 'more targeted option' of adopting the AOA for financial institutions only.[247] The Government has not formally responded to the report but rather has stated that it will consider it as part of its broader tax reform agenda.[248]

The new domestic transfer pricing rules (Division 815 of ITAA 1997) include Subdivision 815-C, which specifically incorporates the arm's length principle of the OECD Model and Article 7 into the domestic law regarding PEs.[249] These rules operate with respect to attribution of profits of an Australian enterprise to a foreign PE as well as attribution of profits of a foreign resident to an Australian PE[250] and will broadly operate to substitute an

[244] Board of Taxation, *Review of Tax Arrangements Applying to Permanent Establishments*, above n 242, [3.20].
[245] Assistant Treasurer John Frydenberg, 'Release of Board of Taxation reports' (Media release, 4 June 2015).
[246] Explanatory Memorandum, Tax Laws Amendment (Countering Tax Avoidance and Multinational Profit Shifting) Bill 2013 (Cth) [4.2].
[247] Board of Taxation, *Review of Tax Arrangements Applying to Permanent Establishments*, above n 242, Observation 5.
[248] Frydenberg, above n 245.
[249] *ITAA 1997* s 815-205.
[250] This application is not obvious on the face of the legislation but is confirmed in the Explanatory Memorandum, Tax Laws Amendment (Countering Tax Avoidance and Multinational Profit Shifting) Bill 2013 (Cth) [4.40].

arm's length profit if a transfer pricing benefit would otherwise arise. One looks to the profits actually attributed to the PE (by the taxpayer) and compares that to the attribution obtained on application of the statutory rules, where this amount is called the 'arm's length profits'.[251] The arm's length profits will be substituted for the profits actually attributed if a 'transfer pricing benefit' arises.[252] This latter term requires two findings: first, the actual attributed profits do not equal the arm's length profits and, second, if one were to use the arm's length profits, the amount of taxable income would increase, the amount of loss would decrease or the available tax offsets would be lower (in effect, there would be a tax advantage or benefit).[253] The PE's 'arm's length profits' are based on an allocation of 'the actual expenditure and income of the entity' under assumptions otherwise consistent with Article 7.[254] For these purposes, the legislation states that guidance is to be had from the OECD Model and Commentaries but, importantly, only as they read before 22 July 2010 (before the new Article 7 and the adoption of the AOA).[255]

By adopting the pre-2010 Article 7 and Commentaries, this in effect allows Australia to continue to take an approach to profit attribution that is different to the AOA, that is, the relevant business entity approach. The Explanatory Memorandum to the Bill inserting the new rules explains this point:

> The Government has yet to determine whether it will change its tax treaty practice to adopt the functionally separate entity approach and as such Subdivision 815-C reflects the approach to the attribution of profits to PEs that is currently incorporated into Australia's tax treaties (the relevant business activity approach). ... Consistent with the approach adopted in Australia's domestic law and in Australia's tax treaties, the arm's length profits must however be identified subject to the constraint that the allocation is determined within the confines of the actual income and expense position (as they apply for Australian tax purposes) of the entity of which the PE is a part.[256]

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[251] *ITAA 1997* s 815-225.
[252] Ibid s 815-215.
[253] Ibid s 815-220.
[254] Ibid s 815-225.
[255] Ibid s 815-235(2)(a).
[256] Explanatory Memorandum, Tax Laws Amendment (Countering Tax Avoidance and Multinational Profit Shifting) Bill 2013 (Cth) [4.2] and [4.45].

This also reflects in the Australian Taxation Office's public ruling on PE attribution: *Taxation Ruling 2001/11 Income tax: international transfer pricing – operation of Australia's permanent establishment attribution rules*.[257] This Tax Ruling is based on the prior version of the legislation so the status of the ruling is not entirely clear but the comments in the Explanatory Memorandum suggest that the approach has not changed. The ruling emphasises that the attribution rules operate to allocate *actual* income and expense and deemed or notional amounts are not relevant—this approach follows the *Max Factor* case, the one Australian case that dealt squarely with the issue.[258] The pricing of dealings between a PE and other parts of the enterprise, either by the transfer price nominated in the accounts or based on a substituted arm's length price, may provide a basis for adjusting the PE's share of the enterprise's income but these dealings are not recognised directly.[259] Illustrative examples of the application of this approach are provided in the Ruling. This is obviously in contrast to the AOA that requires such intra-entity dealings to be priced as part of the process of determining the PE's profits. The Explanatory Memorandum also makes it clear that for these purposes the term 'actual income' is taken to include profits and 'actual expenditure' includes losses and outgoings.[260] Combining actual income and actual expenditure as determined under domestic law that are attributable to the PE will produce a taxable income or profits figure.

[257] TR 2001/11, above n 243.
[258] *Max Factor & Co v Federal Commissioner of Taxation* (1984) 15 ATR 231; 84 ATC 4060 (Sup Ct NSW). The case involved the invoicing of a PE for raw materials and packaging provided by the head office, where the invoices were in US dollars and the amount was expensed in the PE's accounts at that time. According to the invoices, payment was due in 180 days and, when the transfers were made to meet the invoices, the PE recorded foreign exchange losses which it then sought to claim as a deduction for tax purposes. The Court concluded that there was no liability between the head office and PE and therefore no foreign exchange gains or losses could be recognised. The Court determined that the dealings between the head office and the PE were not recognised for Australian domestic tax law purposes.
[259] See TR 2001/11, above n 243, example 2.
[260] Explanatory Memorandum, Tax Laws Amendment (Countering Tax Avoidance and Multinational Profit Shifting) Bill 2013 (Cth) [4.46]. See also *ITAA 1997* s 815-225(3).

Subdivision 815-C also provides source rules with respect to arm's length profits attributed to PEs. These deeming rules are consistent with Australia's tax treaties and the OECD Model: profits attributable to an Australian PE are deemed to be Australian sourced (and therefore taxable in Australia).[261] The rules in Subdivision 815-C have priority over other provisions of the ITAA and will override any inconsistent tax results otherwise obtained.[262] The interaction of this rule with the Australian source rule for income from the sale of REUs under Division 420 will be considered below.

In coordination with these profit attribution rules, there are two mechanisms for the elimination of potential double taxation. A broad exemption is automatically provided for income and capital gains attributable to a foreign PE of an Australian company (called 'foreign branch income' in the legislation) under section 23AH of ITAA 1936 where specific criteria are met.[263] This rule is designed to treat active foreign branch income as non-assessable and to otherwise include in the Australian resident company's income only those profits of the PE that are comparable to that which would have been determined if the PE were a subsidiary subject to the Controlled Foreign Companies regime.[264] The tests for the exemption are more generous where the PE is located in a 'listed country', being Canada, France, Germany, Japan, New Zealand, the US or the UK. The profits attributable to the PE, and therefore potentially exempt under this rule, are determined as discussed above in Subdivision 815-C.

Alternatively, where the branch profits exemption is not available, Division 770 provides a foreign tax credit mechanism (referred to as a foreign income tax offset) for

[261] *ITAA 1997* s 815-230.
[262] Ibid s 815-210.
[263] *Income Tax Assessment Act 1936* (Cth) s 23AH ('*ITAA 1936*'). Technically, the foreign income derived by the PE is not assessable income and not exempt income under the legislation, so in effect it is disregarded for tax purposes.
[264] *ITAA 1936* pt X.

foreign tax paid on amounts included in assessable income.[265] This rule will provide an offset for income that is not otherwise eligible for exemption under section 23AH and is available in the year that the income is included in assessable income for Australian domestic law purposes, whether or not the foreign taxes are paid in that year or another year.[266]

In summary

This section has sought to provide a snapshot of aspects of the domestic tax law of Australia and the UK that would most likely be triggered by cross-border permit transactions. Both jurisdictions tax residents on income wherever sourced and non-residents on domestically sourced income. The revenue asset and CGT regimes in Australia generally require a change of ownership before profits and losses on assets are recognised for tax purposes and this is consistent with the UK's intangible fixed asset regime. However a significant difference lies in the Australian rules applicable to permits held on the Australian registry due to the operation of Division 420.

Australia's domestic law has maintained a relevant business activity approach to the attribution of profits to PEs based on the pre-2010 Article 7, where actual income and expense are considered for attribution to the PE. In contrast, UK domestic law has recently adopted the principles of the AOA with respect to profit attribution whilst still maintaining the realisation principle. Australia has a branch profits exemption for active profits attributable to a foreign PE of an Australia company as well a foreign income tax offset to eliminate double taxation. Similarly, the UK has a new foreign PE exemption by election in addition to a foreign tax credit regime.

[265] *ITAA 1997* Div 770.
[266] Ibid s 770-10(1) and Note 1.

5. International Tax Consequences – Hypothetical Trading Scenarios

This Part takes the models of scheme linking, the domestic taxation of emission permits, and the principles and practices of international tax that have been described in Parts 2 through 4 and tests the alternative tax rules for inter-firm neutrality. It is important to note that the domestic and international tax rules of the jurisdictions do not need to be identically structured in order to maintain neutrality—the question is whether the profits derived in relation to the permits are taxed in the same fashion, which requires consideration of the operation of the domestic rules with the overlay of the relevant treaty practice. It is submitted that inter-firm neutrality will be offended if the quantum of taxable profits of the enterprise depends on its residency or if the interaction of the two tax systems results in unrelieved double taxation or non-taxation. Neutrality would also be violated if the nominal taxable profits are the same but the timing of the tax charge is different, given the time value of money. One specific aim of this analysis is to test whether there are elements of Australia's special statutory regime for permits, compared to the base case set of rules, that violate inter-firm neutrality and therefore would impair the cost-efficiency of a linked market. A second, more general, aim is to consider how the PE profit attribution rules, both the relevant business activity approach and the AOA, interact or interfere with the operation of domestic law in order to determine if these fundamental principles of the international tax regime could also be a barrier to inter-firm neutrality under linked schemes.

This Part proceeds by way of analysing the international tax treatment of six hypothetical cross-border scenarios. It is acknowledged that not every possible scenario is considered and these six have been identified as representative of those more likely to arise in practice. The scenarios build from basic to more complex transactions and can be briefly summarised as follows:

1. Cross-border holding of permits
2. Transfer of permits out of home jurisdiction (export) and sale
3. Transfer of permits into home jurisdiction (import) and sale
4. Import and surrender
5. Receipt of free allocation, export and sale
6. Export and sale in a volatile market

The three linking architectures (common registry, direct link, and indirect link) are considered where relevant and two sets of domestic tax laws are compared, the so-called 'Base Case' approach based on UK revenue law and accounting practice and Australia's Division 420. In addition, two approaches to PE profit attribution are applied based on UK law as a model of the AOA and Australia as a model of the relevant business activity approach. It is assumed that the jurisdictions that have linked their ETSs also have a tax treaty in place, which is based on the OECD model.

Assumptions

For the purposes of the analysis Country Alpha and Country Beta represent two jurisdictions that have linked their ETSs and have adopted the 'Base Case' approach to the taxation of emission permits. This Base Case was developed in Part 3 and has the following features. It is assumed that the domestic tax law of each state requires a change of ownership before profits and losses on assets are realised and profits on assets used in carrying on business, including permits, are subject to taxation in the hands of the enterprise as business profits rather than as capital gains. Compliance liabilities are recognised for tax (and accounting) purposes as they accrue (that is, as the greenhouse gases are produced) and permits received by way of a free allocation are given a nil cost base. Each state asserts

jurisdiction to tax income of residents from all sources and income of non-residents from sources within the jurisdiction. There is a tax treaty in place based on the current OECD Model. Both states have either a foreign tax credit mechanism or an exemption for the profits of PEs of resident enterprises derived in a treaty state. Both states have adopted into their domestic legislation PE attribution rules based on the AOA and both apply transfer pricing methods consistent with the OECD Transfer Pricing Guidelines. It is assumed that the hypothetical enterprises resident in the jurisdictions are carrying on business there.

One broader issue that is explored in the scenarios is whether domestic law that retains the realisation requirement is compatible with the AOA. Sasseville and Vann suggest that the separate entity approach is a 'better fit' with the domestic tax law of civil law countries that generally recognises notional transfers (which are also recognised in the financial accounts) and where the accounting profits are the basis for taxable income.[267] In contrast, common law countries (such as Australia and the UK) are less likely to recognise notional transfers for tax purposes and determine taxable income based on special tax rules rather than on accounting records.[268] As a result, there is an issue whether the adoption of the AOA for the purpose of PE profit attribution in the domestic law overrides the realisation requirement, at least with respect to the PE. The residence state may base its taxation of the enterprise on actual income and expenses regardless of the AOA given that the AOA only applies to the PE.[269] It seems clear that the adoption of the new Article 7 in the tax treaty would alone not have the effect of overriding the realisation requirement in domestic law. As stated in the 2010 PE Report, the AOA 'does not dictate the specifics or mechanics of domestic law, but only sets a limit on the amount of attributable profit that may be taxed in

[267] Sasseville and Vann, above n 134, [4.2.3.7].
[268] Ibid.
[269] Ibid [4.2.3.11].

the host country of the PE'[270] and later, the AOA 'is based on the premise that the internal dealings are postulated *solely* for the purposes of attributing the appropriate amount of profit to the PE' (emphasis in the original).[271] It will be a matter of domestic law whether an intra-enterprise transfer of an asset is treated as a realisation event and therefore whether the cost base in the asset should be adjusted to market value at that point.[272] Without such adjustments there is the potential of double taxation or at least timing mismatches, especially when assets are transferred from a PE to a head office and later sold or when the transfer price from the head office to the PE is greater than the final sale price.

Scenario 1: Cross-border holding of permits

These first scenarios are designed to illustrate the tax consequences of simple purchase and sale transactions when the permits are retained within one jurisdiction. It was shown in Part 3 that the Division 420 approach to taxation can produce timing differences compared to the Base Case even when dealing with wholly domestic transactions. These scenarios begin the process of building in international dealings and taxation.

Scenario 1(a): No cross-border element

In this most basic scenario, a company resident in Country Alpha (referred to hereinafter as R(A)) acquires permits on the Alpha Registry by way of purchase in an arm's length transaction for $100 in year 1. By the end of year 1, the value of the permits has risen to $110. In year 2, R(A) sells the permits on the Alpha Registry for $115 to an arm's length third party.

[270] *2010 Attribution Report*, above n 135, [9].
[271] Ibid [173].
[272] See Harris and Oliver, above n 110, 418-20 and 423-24.

Under the Base Case, the $15 profit will be realised in year 2 and included in business profits earned by R(A) in carrying on business in Alpha and will be taxable in Alpha as income of a resident, R(A). This is consistent with the application of the UK's intangible fixed asset regime under the CTA 2009. Under this scenario, there is no connecting factor to Country Beta and Beta does not assert jurisdiction to tax.

If Alpha adopts the Division 420 approach, the permits held on the Alpha Registry would be REUs. The acquisition in year 1 is not a taxing point given that the deduction for the purchase cost is offset by the increase in the rolling balance, reflecting the new permits still held at year end. The taxing point is when the permits are no longer in the Alpha registry account in year 2. The gross proceeds of the sale are included in income and a deduction (equal to the carrying cost of the permits) is available for the decline in the rolling balance as at the end of year 2, in effect, a (net) profit of $15 is realised. Although Division 420 asserts that the proceeds are sourced in Alpha, this will in effect be irrelevant given Alpha's right to tax the income of R(A) on a residency basis. The tax treatment is therefore the same as the Base Case and the operation of Division 420 does not violate inter-firm neutrality.

Scenario 1(b): Cross-border holding

A variation of the first scenario sees the enterprise resident in Alpha (R(A)) acquiring permits on a registry hosted and maintained in another jurisdiction, Beta, for $100 in year 1. In year 2, these permits are sold to an arm's length party for $115. This situation could arise under any of the three linking architectures but they are not separately considered given that there is no transfer across jurisdictions contemplated by this scenario.[273]

[273] This scenario could arise under the common registry architecture if the registry is hosted in the partner jurisdiction. For example, the registry for the California-Quebec linked scheme is the Compliance Instrument Tracking System Service maintained by a non-profit corporation formed to provide administrative and technical services for the Western Climate Initiative. The company is based in California.

Under the Base Case, on the sale of the permits to the third party in year 2, the profit of $15 will be realised under the domestic law of both Alpha and Beta. The domestic law of Alpha will assert the right to tax the profit on the basis of R(A)'s residency. An application of the typical source rules is likely to determine that the profits are sourced in Beta on the basis that the permits are 'located' or registered there, though this is not certain. If the place of contract is the domestic source rule, secondary on-market trades would also occur through the registry but over-the-counter transactions could be sourced wherever the contract is created or the sale is given legal effect, though such trades must still be recorded in the registry. This uncertainty led Australia to adopt a statutory source rule for permit transactions. For the purposes of this analysis, source will be assumed to be the location of the registry.

Under Article 7 of the OECD Model, although the profit may be sourced in Beta, Beta will only have the right to tax the profit if R(A) has a PE in Beta and the profit is attributable to that PE. It will be a question of fact if the activities of R(A) in Beta meet the definition of a PE under Article 5 but the mere holding of a registry account will not be enough.

If there is a PE in Beta, the profit from the sale of the permits will be taxable in Beta if the transaction is within the scope of the PE's activities. This would generally require that the permits were used by the PE in carrying on its business. Under the UN Model, with its somewhat wider meaning of PE and the limited force of attraction rule in Article 7, the profits will be taxable if the transaction is either within the scope of the PE's activities or of the same kind as that entered into by the PE.

If it is determined that R(A) has a PE in Beta, Article 7(2) will apply to determine the extent to which the profits of R(A) are attributable to that PE, where the profits realised by the enterprise in relation to this transaction is $15. This scenario does not suggest intra-enterprise dealings and it is assumed that the permits are purchased and held by the same

business unit of the enterprise (the PE) throughout the relevant period. The tax consequences of transfers within an enterprise are analysed in later scenarios.

Under the AOA the PE will be treated as a separate and independent enterprise to the rest of the enterprise. If the PE acquired the permits for its own use or for its own trading purposes, the functional and factual analysis could attribute the economic ownership of the permits to the PE for the entirety of the holding period and, as both the acquisition and sale transactions are with arm's length third parties, the pricing should not be disturbed. Beta would have the primary taxing right with respect to the $15 profit under Article 7(2). From Alpha's perspective, R(A) would be able to claim a foreign tax credit for the tax paid in Beta on this profit or may be able to access the branch profits exemption available under the domestic law of Alpha (such as the UK's foreign PE exemption by election available under the CTA 2009 s 18A).

If Alpha adopted Division 420 rules, permits on the Beta Registry would not be REUs (as they are not held on the Alpha Registry) so the ordinary rules for revenue or business assets would apply. This would produce the same net profit result in year 2 as the Base Case above, both in relation to taxing rights and the attribution of profits under the AOA.

Alternatively, applying Australia's domestic law approach to PE attribution, [274] the relevant business activity approach (as described above) will be applied and the domestic law treats any profits attributed to the PE as sourced in the location of the PE, that is, in Beta.[275] The relevant business activity approach looks to allocate the actual profits of the enterprise (here the $15 realised in year 2) to the PE in light of the assumption of a separate PE entity dealing at arm's length with the enterprise. If, as is assumed here, the PE has acquired and used the assets for its business purposes for the whole time that the permits were owned by

[274] *ITAA 1997* s 815-215.
[275] Ibid s 815-230.

the enterprise, again the whole of the profit of $15 should be attributed to the PE, earned in year 2. The s 23AH branch profits exemption will be available for profits attributable to the overseas PE provided that the other conditions of the section have been met. If the exemption were not available, a foreign income tax offset under Division 770 would be available.

If instead Beta adopted Division 420, the scenario would see R(A) buy and sell REUs on the Beta Registry. As described above for Scenario 1(a), the application of the rolling balance method in Division 420 produces a net profit as taxable income. Although the Division 420 rules deem the income to be sourced in Beta, the tax treaty would preclude taxation of the profits by Beta unless R(A) has a PE in Beta and the profit is attributable to that PE. The deemed source rule in Division 420 therefore has no real effect when a relevant treaty source rule is operative.

All variations of this scenario produce the same tax effect with respect to quantum of taxable profits ($15) and the timing of taxation (year 2) and there would be no double taxation. Therefore inter-firm neutrality is maintained and tax consequences should not distort the permit market.

Scenario 1(c): Mark-to-market

The ordinary business (revenue) asset rules in Australia only pick up a change in the value of an asset on realisation whilst the UK intangible fixed asset regime will allow an expense for an asset write-down but generally requires a realisation event (a disposal) for gains to be recognised.[276] In comparison, with respect to REUs, the Australian statutory scheme gives an entity the option to value the permits on hand at year-end either at cost or

[276] *CTA 2009* ss 735 and 736 and HMRC, CIRD30560—Intangible assets: notes on accounting practice: impairment loss.

market value,[277] where this reflects options provided under Australia's trading stock (inventory) tax rules.[278] To illustrate the effect of this, it is assumed that Scenario 1(a) is varied such that R(A) chooses to mark-to-market with respect permits held on the Alpha Registry. The other assumptions are retained: the permits have risen to a value of $110 by the end of year 1 and the permits are sold in year 2 for $115.

Under the Division 420 approach, R(A) would recognise taxable income of $10 in year 1 (deduction for the cost of $100 and income in the increase of the closing balance to $110 reflecting market value) and an additional $5 in year 2 being the profit on sale of the permits (proceeds of $115 included in income and a deduction of $110 for the decline in the rolling balance). The profit will in effect be taxed in Alpha as it accrues across the two years on the basis of the residency of R(A). Compared to the Base Case which defers recognition until the sale in year 2, the Division 420 rules create a timing disadvantage in a rising market but a taxpayer might choose this treatment in order to save on tax compliance costs if the permits are marked to market in the financial accounts.

A potentially interesting cross-border issue arises if the enterprise resident in Beta (R(B)) has a PE in Alpha and R(B) has elected the mark-to-market option under a Division 420 scheme for the purposes of determining the taxable income derived in Alpha, but the domestic rules in the home state (Beta in this scenario) requires a realisation event before gains or losses are recognised. Although the tax on the gains will be payable in Alpha as the gain accrues, the income will not be recognised in Beta until the sale in year 2 so the FTC method would need to allow R(B) to claim credits for the taxes paid in Alpha in both years 1 and 2. Under Australian tax law, for example, such a credit is allowable under the foreign income tax offset rules, which state that the taxpayer is entitled to a tax offset for the amount

[277] *ITAA 1997* s 420-51.
[278] Ibid div 70.

of foreign income tax paid in respect of an amount and Note 1 specifically states that the offset is available 'even if you paid the foreign income tax in another year.'[279] The practical way to avoid any potential problem here would be to use the historical cost method rather than mark-to-market.

Scenario 2: Transfer of permits out of home jurisdiction (export) and sale

This scenario introduces the cross-border flow of permits and the form of the transactions will depend on the style of linking between the ETSs. It is assumed that the permits are acquired by the head office of R(A) in Alpha and are 'exported' to Beta for sale. As this scenario only involves exporting permits, the indirect link architecture (which only allows imports) is not considered.

Common registry

Under a fully-linked, common registry arrangement, a cross-border issue could arise if the head office of R(A) acquires the permits by way of an arm's length transaction from a party in Alpha for $100 but then sells the permits in year 2 to a company resident in Beta, (R(B)), for $115. Although there is no physical transfer, the transfer of ownership and use of the permits could be seen as effectively an export from Alpha to Beta. Under the Base Case, Alpha would assert the jurisdiction to tax the profit realised in year 2 on the basis of the residency of R(A). Source rules for sales of assets often pick up the asset location or the place of contract (the 'from where' rule) but the more important source rule for treaty purposes (the 'from what activity' rule) will consider whether the sale relates to the business carried on by the head office in Alpha or if there is a PE of R(A) in Beta. A simple sale of this nature would not alone give rise to a PE and the profit would only be taxable in Alpha under the tax treaty.

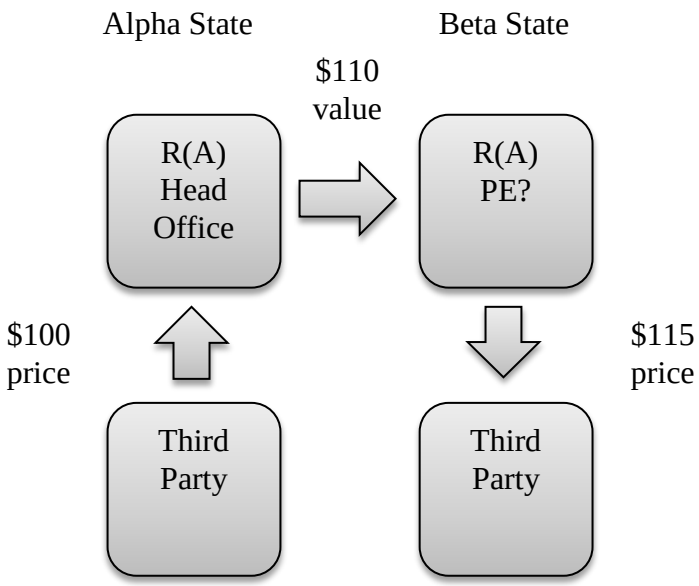
[279] Ibid s 770-10, Note 1.

However, if R(A) does have a PE in Beta and if either the permits were always held by the PE or the economic ownership of the permits shifted at some point from the head office (or some other part of the enterprise) to the PE, then all or some of the $15 may be attributable to the PE and therefore taxable by Beta under Article 7(2) of the tax treaty. Alpha would be required to relieve the potential double tax on the attributed profit by a credit or exemption method under Article 23. If Alpha adopted the Division 420 approach, it is assumed that the concept of REUs would be extended to permits on the common registry and the rolling balance method would, in effect, produce the same net profit ($15) realised in the same year (year 2).

Direct link

If the registries are instead linked by way of a direct linking mechanism, this cross-border transaction assumes that R(A) acquires the permits on the Alpha Registry for $100. To take advantage of a market opportunity, R(A) transfers the permits to its account on the Beta Registry at some point in year 1 (assume that the permits have a market value of $110 at this point). In year 2, R(A) then sells the permits on the Beta Registry to an arm's length third party for $115. From Alpha's perspective, the transfer between registries can be characterised as an export of permits from the head office of R(A) to Beta. This can be visually represented as follows.

Figure 1. Export and sale



Starting with the Base Case, the transfer between registries would not trigger a taxing point in either Alpha or Beta as there has been no change in ownership. When the permits are sold on the Beta Registry, the enterprise would realise a $15 profit—this would be recognised by both jurisdictions in year 2 and Beta's domestic law could treat the profit as sourced in Beta given that the sale occurred on the registry there. Under the tax treaty, Beta's right to tax will depend upon whether R(A)'s activities in Beta constitutes a PE and the extent to which the profit is attributable to the PE. If R(A) does not have a PE in Beta, Alpha will retain sole taxing rights under the tax treaty based on the residency of R(A).

If R(A) does have a PE in Beta and the sale to the third party occurs through the PE, the tax consequences will depend in part on whether the domestic law of Alpha deems a realisation event when the permits are transferred out of the jurisdiction from the head office. The transfer to another registry is an outward sign that may indicate a transfer of use between the parts of the enterprise, such as the PE and the head office or another PE. For the purposes

of the various scenarios analysed in this paper, when considering a case involving a PE, it is assumed that the transfer between registries does reflect a transfer in use of the asset. The Base Case assumes that intra-firm transactions are not recognised for domestic law purposes so that the profit of $15 is only realised by the enterprise in year 2. Beta will have the right to tax the profit of the enterprise to the extent it is attributable to the PE. Harris and Oliver have suggested that, in such a case as this, there was a risk under the old approaches to PE attribution that the whole of the profit could be sourced to Beta if there was no step-up in cost base of the permits on the transfer to the PE, and therefore Alpha would lose its taxing rights in relation to the profit that accrued whilst the permits were held by the head office, or alternatively there could be non-taxation if the transfer out was not recognised by Alpha and the foreign PE's profit was not taxed by Alpha and from Beta's perspective, there was a step-up of cost to the PE so that only $5 would be taxable in Beta.[280] However, the AOA requires greater recognition of the economic effects of the transfer, even if only for attribution purposes.

When the enterprise realises the $15 profit in year 2, Alpha will assert the right to tax on the basis of the residency of R(A) whilst Beta will assert the right to tax on the basis of source. For the purpose of determine the amount that may be taxed by Beta, under the AOA, if the permits are originally held by the head office and then become available for use and economically owned by the PE, this will be seen as a dealing between the head office and the PE for Article 7 purposes that would need to be priced using transfer pricing methodologies under Article 9 as if the PE were a separate and independent entity. The treatment of the dealing in the accounts of the enterprise will provide evidence of the time at which the use changed and the 'price' for the transfer. If this price reflects an arm's length price, no adjustment will be required and the profits of the PE as calculated in the accounts will be the

[280] Harris and Oliver, above n 110, 419-20.

amount attributed for the purposes of the tax treaty. For simplicity it is assumed that the PE obtains the economic ownership of the permits when they are transferred to the Beta Registry. Based on the CUP method, the appropriate transfer price would be the market price of $110 so this would be the deemed cost to the PE. When this is compared to the final proceeds of $115 (this price is accepted as it is a real transaction with an independent person), the PE should be attributed with a $5 profit that corresponds to the $5 increase in value that arose during the time that the PE was the economic holder of the permits. Beta would have the (priority) right to tax only $5 of the $15 profit realised in year 2 and Alpha would have the right to tax the whole of the $15 on a residency basis but would then need to provide relief by either exempting the PE's profits or providing a FTC for the tax paid in Beta on the $5. This approach can be seen in the application of the domestic law of the UK where intra-firm transactions are not realisation points from the resident enterprise perspective but they are recognised for determining PE attribution. As was noted in the 2008 Commentary to Article 7, it is a matter of domestic law if there is a deemed realisation event when business property leaves the purview of a tax jurisdiction[281] but the Commentary also warns that imposing tax on such internal transfers can lead to a potentially serious timing mismatch, given the time lag until the profits are actually realised by the enterprise.[282] This case does not produce such a timing mismatch given that the realisation time for both the PE and the enterprise is the sale of the permits to the third party. For the purposes of determining the FTC available to a UK resident company in relation to a foreign PE, the profits of the PE are determined on the separate entity approach, and this same rule applies for the PE exemption

[281] *OECD 2008 Model Tax Convention on Income and on Capital: Commentary on Article 7* (2008), [21].
[282] Ibid [22].

determination.[283] This corresponds also with the UK domestic law for the attribution of profits to the UK-based PE of a non-UK resident company under the CTA.[284]

Alternatively, if the tax treaty between Alpha and Beta reflects the pre-2010 version of Article 7, the parties may in practice continue to apply the relevant business activity approach rather than the AOA. For an illustration of how this kind of approach can operate, reference may be had to the interpretation of the PE attribution rules by the Australian Commissioner of Taxation as described in TR 2001/11. The Commissioner states that what is to be considered is the extent to which the profit of the enterprise (in this case $15), being the *actual* income realised in year 2, is attributed to the PE.[285] According to the Ruling, the books of account will indicate a starting point for the attribution but if the arm's length price that would have been paid by the PE had it been separate and independent is different to that reflected in the accounts, then this would provide a basis for increasing or decreasing the share of the enterprise's income attributable to the PE.[286] If the books of account show the 'price' to the PE as $110, this will correspond with the arm's length price and the $5 profit shown in the accounts of the PE will be correctly attributable to the PE for tax purposes, both for domestic law and treaty purposes, and no adjustment would be required. This matches the outcome under the AOA (described above) although the mechanism is somewhat different.

It is suggested that in future there may be greater recognition of intra-firm dealings in domestic law, in respect to both treating such transfers as realisation events and allocating profits to PEs. Such intra-firm dealings are often already priced in the financial accounts of the enterprise and a greater reliance on such accounts to determine the tax base would move towards recognising such dealings as realisations, such as is already the case in some civil

[283] *TIOPA 2010* ss 42 and 43.
[284] *CTA 2009* s 21.
[285] TR 2001/11, above n 243, [1.9].
[286] Ibid [4.6], [4.16] and [4.39].

law jurisdictions. In addition, if more jurisdictions move towards adopting the AOA for determining taxing rights under tax treaties, domestic laws that link to the tax treaty methods may also have the effect of recognising these transactions, at least from the perspective of PE attribution. The adoption of the AOA alone will still leave the possibility of mismatches given that it applies for the purposes of the attribution of profits to the PE but is silent with respect to the determination of the business profits of the enterprise as a whole.

By way of example of a full recognition approach, if Alpha did have a domestic tax law that deems a realisation event on the transfer of an asset (the permit) from the head office to the foreign PE, then in year 1 the enterprise would include the $10 in its profits taxable in Alpha (based on residence in Alpha). Beta would have no taxing rights up to this point. This type of rule may be seen as advantageous to the home state with respect to transfers to a PE given that the home/residence country will lose its primary taxing right if the asset is transferred overseas to a PE. When the permits are sold in year 2, as Alpha would have provided a step-up in the cost of the permits to the enterprise, only $5 profit would be realised in year 2. Whether or not Beta also provided a step-up in the PE's cost (so whether Beta's domestic law recognises $5 profit or $15 profit in year 2), the application of the AOA would limit Beta's right to tax to only $5 and Alpha would be required to relieve any double tax on this amount by exemption or credit. The difference is one of timing – under this approach the gain is taxable to the enterprise as it accrues rather than on realisation. As a result, such a rule could inhibit intra-firm transfers compared to retaining permits within one jurisdiction or cross-border transactions not involving a PE.

If it is assumed that Alpha has adopted the Division 420 approach, the transfer of permits (now REUs) by the head office of R(A) from the Alpha Registry to the Beta Registry would be classified as an 'export' of permits, triggering s 420-35 of ITAA 1997 and a

deemed sale and repurchase for market value in year 1. This is much like the intra-firm transaction rule described above except that it applies more broadly, being triggered when the permits leave the registry whether or not they are transferred to a PE. The profit realised at this point ($10) is taxable to the enterprise in Alpha on the basis of R(A)'s residency. Once the permits are no longer on the Alpha Registry, they cease to be REUs and the provisions of Division 420 no longer apply. The permits will need to be reclassified under Alpha's domestic law and it is assumed that they would be seen as revenue assets. The permit export rule deems a market value cost basis ($110) to R(A) for these purposes. On sale for $115 in year 2, an additional $5 profit will be realised from Alpha's perspective, derived by R(A). From Beta's perspective, the transfer between registries is not relevant as it is not a change of ownership so the whole of the profit of $15 will be realised on the sale in year 2. Beta could argue that the profit is sourced in Beta based on the location of the registry. However, if R(A) does not have a PE in Beta, under the tax treaty, the profit will only be taxable in Alpha based on R(A)'s residency. This is the same as the Base Case except for the early recognition of the first $10 of profit in year 1.

However, if R(A) does have a PE in Beta, Beta will have the right to tax the profit to the extent to which it is attributable to the PE. For the purposes of applying the AOA, the dealing between the head office and the PE will be priced on an arm's length basis as described for the Base Case, and this is likely also reflected in the accounts of the PE and also reflects the deemed sale from the Division 420 export rule. Beta has the right to tax the $5 and Alpha must either exempt the PE's profits or provide a credit for the tax paid on the $5 in Beta. The difference between the Base Case and Division 420 is one of timing: the first $10 of accrued gain is taxed in Alpha in year 1 under Division 420 and only taxed under the Base Case assumptions in year 2.

A further variation assumes that Alpha has adopted Division 420 but also applies the relevant business entity approach to PE attribution in its tax treaty with Beta. From Alpha's perspective, there are two realisation events—the export of the permit in year 1 and its sale in year 2. As only the sale in year 2 could involve the PE, Article 7 will apply to determine the extent to which the actual profit of $5 realised in year 2 is attributable to the PE. Under the assumed facts, with reference to arm's length pricing of the transfer to the PE, the profit should be wholly attributed to the PE and Beta will have the right to tax this profit. Again, under these facts, this matches the outcome under the AOA.

In summary, the timing of the derivation of the profits from the holding of the permits will differ depending on the operation of the domestic law in relation to the export transaction. Under the Base Case, the profit will be realised in year 2 and will be wholly taxable in the country of residence unless the enterprise has a PE through which the permits have been held. If there is a PE, the increase in value attributable to the PE holding period will be taxable in the host country (Beta), also in year 2. However, the operation of either a domestic rule that fully recognises intra-firm dealings or the export rule of Division 420 produces two taxing points, a deemed realisation in year 1 with a step-up in cost and then disposal by the enterprise in year 2. Whilst this should not lead to double taxation under these facts, R(A) suffers a timing disadvantage as tax is payable on the accrued gain in year 1 when the same transfer off the registry under the Base Case would not have triggered a taxing point until year 2 and this difference in outcome violates inter-firm neutrality. The different approaches taken to PE attribution do not appear to have a disparate impact under this scenario.

Scenario 3: Transfer of permits into home jurisdiction (import) and sale

This scenario contemplates permits that have been held overseas, either by a non-resident or on a foreign registry, being brought into a jurisdiction by a resident entity and then sold to an arm's length third party.

Common Registry

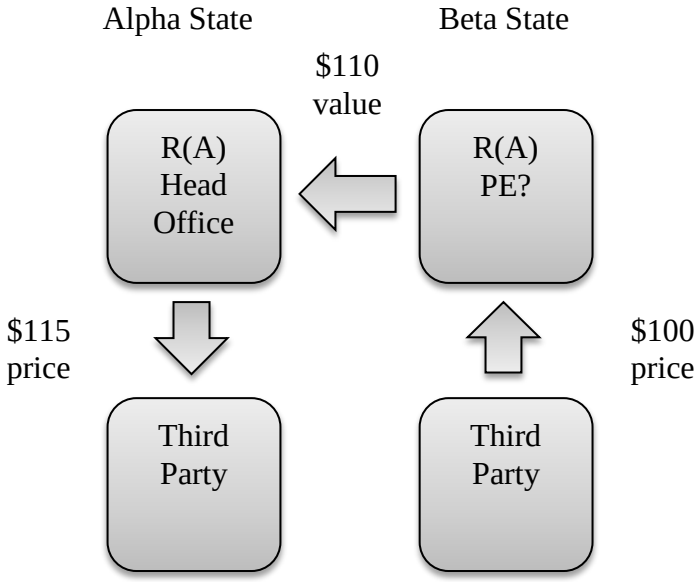
Under a fully-linked, common registry arrangement, an import of permits could be seen to occur if R(A) acquires the permits by way of an arm's length transaction from a party in Beta for $100 in year 1 and then sells the permits to another company resident in Alpha for $115 in year 2. Alpha would assert the jurisdiction to tax the whole of the profit realised in year 2 on the basis of the residency of R(A). Whether Beta has the right to tax any of this profit will turn on whether the permits were acquired by R(A) by or through a PE in Beta. If there is a PE, the ultimate sale to the arm's length party in Alpha could either be undertaken through the PE (such that the economic ownership is retained by the PE throughout the holding period) or the use of the permits could first be 'transferred' to the head office in Alpha and then sold. The AOA would operate to determine the correct allocation of profits in either case, based on arm's length pricing of any intra-enterprise dealings. This pricing is analysed below for the purposes of the direct link architecture.

Direct link

This import transaction by way of a direct linking mechanism assumes that R(A) acquires the permits on the Beta Registry for $100. To take advantage of market opportunities, R(A) first transfers the permits to its account on the Alpha Registry in year 1 (assume that the permits have a market value of $110 at this point). In year 2, R(A) then sells

the permits on the Alpha Registry to an arm's length third party for $115. This can be visually represented as follows.

Figure 2. Import and sale



As noted, under the Base Case, a transfer of assets between one part of an enterprise and another is not recognised as a taxing point so the shift of the permits from one registry to another will not alone give rise to tax consequences. When the permits are sold in year 2, the $15 profit will be realised under the domestic tax laws of both jurisdictions. Alpha will assert residency-based taxing rights so Beta will only have source-based taxing rights under the tax treaty if R(A) has a PE in Beta through which the permits were held initially. If R(A) does not have a PE in Beta, the profit will only be taxable in Alpha.

If R(A) does have a PE in Beta, and it is assumed that the permits were originally acquired through the PE, Article 7(2) of the OECD Model and the AOA will require that the dealing between the PE and the head office be quantified under accepted transfer pricing

methodologies. Assuming the transfer of economic ownership coincides with the transfer between registries, the CUP method will give rise to a transfer price of $110 and a $10 profit attributable to the PE. Beta will have the right to tax this profit but, under the Base Case assumptions, the domestic law of Beta will only consider the profit to be realised in year 2 (even though the accounts would show the profit 'realised' in year 1). Alpha would have the right to tax the whole of the $15 profit in year 2 but must provide relief in relation to the $10 attributable to the PE. If, alternatively, the tax treaty between Alpha and Beta supports their practice of applying the relevant business activity approach to profit attribution, the actual profit of $15 will be realised on the sale to the third party and will be attributed with reference to arm's length pricing. It is likely that this would give rise to the same allocation as under the AOA.

If Beta's domestic law more closely incorporates the AOA and recognises outbound intra-firm dealings as notional disposals, it will seek to tax the accrued profit of $10 in year 1 and Beta's right to tax this amount will be supported by the AOA. A jurisdiction in Beta's position might adopt such a rule given that it may be more difficult to assert jurisdiction to tax by year 2, given that at that point the asset is held by the head office of R(A) in Alpha and the location of the permits is on the Alpha Registry. This approach also has a potential timing advantage to source countries in comparison to the relevant business activity approach.[287] However, it is suggested that the adoption of the AOA for treaty purposes would not alone achieve this result—it would also require a deemed disposal rule to be explicitly incorporated into the domestic law. Beta would then not assert any taxing rights in relation to the disposal in year 2. Alpha would likely only recognise the disposal (by the enterprise) in year 2 but under the tax treaty and domestic law must either exempt the PE's share of the profits or give

[287] Andrea Black, 'Attribution of Profits to PEs: Implications of the "Authorized" OECD Approach (Part 2)' (2010) *Journal of International Tax* 53, 61.

credit for the tax paid in B in year 1. This effect could be achieved by either recognising the $15 profit in year 2 and providing an exemption or credit in relation to the $10 taxed in Beta in year 1 or by providing a step-up in cost when the permits come to be held by the head office, so that only a $5 profit is recognised by Alpha in year 2.

Assuming that Alpha adopts rules based on Australia's Division 420, whilst the permits are held on the Beta Registry they would not be REUs so R(A) will need to first characterise the permits for tax purposes, the most likely option being revenue asset. When the permits are transferred to the Alpha Registry, they are transformed into REUs and the transfer triggers the permit import rule.[288] This rule deems a sale of the permits for cost (so no profit or loss realised) and a repurchase (now as REUs) for cost ($100). This deemed purchase of REUs gives rise to a deduction for the purchase price and a cost for rolling balance purposes. As the REUs are still held at the year end, the deduction for cost is matched by the increase in the rolling balance representing the new REUs, so there is no net tax result in year 1. From Beta's perspective, the transfer between registries is not a taxing point. When the permits are sold for $115 in year 2, the rolling balance method will produce a net profit of $15, which will be deemed wholly sourced in Alpha under the provisions of Division 420. Beta would also recognise this profit realised in year 2 but Alpha will have the exclusive right to tax it on the basis of the residency of R(A) if the enterprise does not have a PE in Beta.

If R(A) does have a PE in Beta through which the permits were initially acquired, then the AOA must be considered to determine the taxing rights of Beta. From an accounting perspective, the transfer to the head office for the arm's length price of $110 will occur in year 1 and will produce a $10 profit to the PE in Beta in relation to year 1. Beta will therefore

[288] *ITAA 1997* s 420-21.

have the right to tax this $10 profit under the tax treaty. However, if the domestic law of Beta does not recognise this as a taxing point (as under the Base Case assumptions), this profit should not be included in the PE's taxable profits in year 1. When in year 2 Beta recognises the disposal by the enterprise, then $10 of the $15 profit should be treated as attributable to the PE and therefore taxable by Beta. If Beta's domestic law does fully recognise intra-firm outbound transfers of assets, then $10 profit will be recognised in year 1 and will be wholly attributable to the PE at that point. However, the application of Alpha's domestic law may give rise to a different result.

From Alpha's perspective and under the operation of Division 420 as incorporated into Alpha's law, the $15 profit is only technically attributable to the period in which the permits were REUs, being the time held by the head office, so there would be an argument that under Alpha's domestic law none of this profit would be subject to the PE attribution rule. This could lead to double taxation as Alpha would therefore not apply its PE profits exemption or FTC to the $10 profit that Beta could assert the right to tax. Such an outcome would be even more likely if Alpha applies the relevant business activity approach. Under Alpha's domestic law, there would be two taxing points: the deemed disposal with roll-over (nil profit) and the Division 420 sale ($15 profit realised). Only the first transaction involves the PE so there would be no actual profits under the domestic law to attribute. It would be necessary to seek a case-by-case solution to this problem under the tax treaty. The potential double taxation illustrated by this variation violates both the capital neutrality principle of tax law and the inter-firm neutrality objective of the permit market.

In summary, the simple Base Case scenario not involving PEs will result in the enterprise being subject to tax on the whole of the $15 profit in year 2 in the country of residence only. The introduction of a PE would see the part of the gain attributable to the PE

holding period being taxable by the host country, still in year 2. The Division 420 import rule would not change the timing of the derivation of the profit but there is an argument that it could interfere with the correct functioning of the PE attribution rules, leading to potential double taxation.

Indirect link

Under an indirect linking model, this scenario would involve R(A) transferring the permits on the Beta Registry to Alpha's Regulator and the Alpha Regulator issuing replacement (shadow) permits on the Alpha Registry to R(A). Given that the surrender of the original permits and replacement with new permits would be an actual disposal, it would ordinarily trigger a realisation of any accrued gain or loss. This would have the effect of reducing market liquidity and efficiency. To avoid this result, it would be in the interest of the country establishing such a linking architecture to consider providing a tax roll-over for this step so that only when there is a sale outside the enterprise will any profit or loss be realised (similar to the Division 420 permit import rule). If R(A) had a PE in Beta through which the permits were initially acquired, the transfer to the Regulator would be recognised for PE profit attribution purposes and this should then lead to the same tax result as under the Base Case rules in the Direct Linking model.

Scenario 4: Import and surrender

This variation assumes that R(A) has compliance liabilities under the ETS operating in Alpha. In year 1, R(A) acquires permits from an arm's length third party in Beta for $100 with the intention of using the permits to meet the compliance obligation. The permits are surrendered in year 2 at a time when the market value of the permits is $115. What is fundamentally different in this scenario is that it reveals the additional issues raised by the

fact that emission permits are not merely tradeable assets but are also the medium by which compliance liabilities are satisfied. The enterprise does not here realise a profit or loss on an asset but rather the relevant tax consequence to the enterprise is that a compliance expense is incurred and satisfied. This hypothetical does not include a variation that the permits are transferred from the head office to a PE (in effect, an export by the head office and an import by the PE) for compliance purposes on the basis that the scale and nature of the activities that would give rise to an ETS liability would almost certainly be carried on through a separate associated company rather than a PE (that is, a PE would not ordinarily have a compliance obligation). An export by the head office to meet compliance obligations within a multinational enterprise would therefore likely take the form of a sale of permits from one company to an associated company.

Common Registry

Under a fully-linked, common registry arrangement, an import of permits could be seen to occur if either R(A) acquires the permits on the registry that were originally issued by Beta or if the permits are acquired from an enterprise operating in Beta. However, if the ETSs of Alpha and Beta are fully integrated, they may hold common auctions like those underway within the EU ETS and the California-Quebec linked scheme.[289] The EU ETS operates two auctioning platforms, located in Leipzig (covering most of the participating countries, including Germany) and London (the UK's platform).[290] It is arguable that the permits acquired through these auction platforms are at least initially 'located' there.

This scenario assumes that the permits are acquired and nominated for surrender in year 1 and surrendered to the regulator in year 2. From Alpha's perspective, the transaction is

[289] Joint auctions under the California-Quebec linked scheme commenced in November 2014. See State of California, Air Resources Board, *Archived Auction Information and* Results (2015).
[290] For details on the current auctioning platforms for the EU ETS see European Commission, *Climate Action: Policies: ETS: Cap: Auctioning* (2015) <http://ec.europa.eu/clima/policies/ets/cap/auctioning/index_en.htm>.

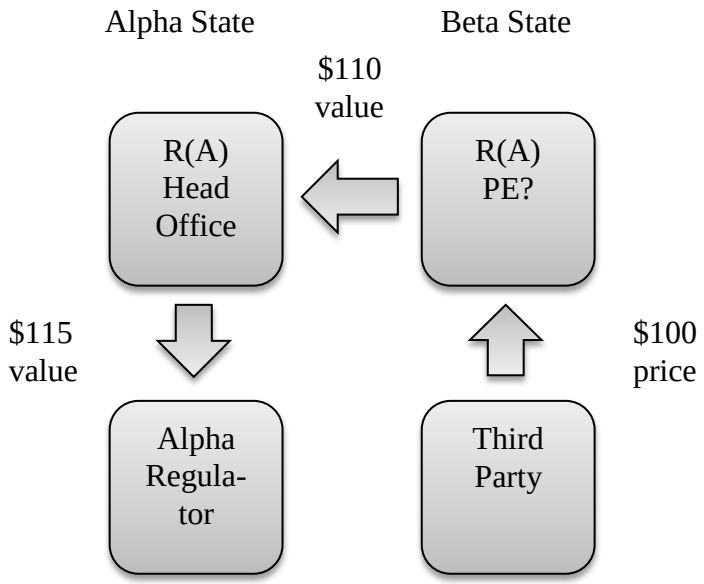
relevant for the purposes of determining the value of the deduction allowable to R(A) in relation to the compliance liability. The Base Case provides that the compliance expense is deductible as it accrues and the valuation of the liability is based on the cost of permits on hand, thereby allowing a deduction for the $100 cost in year 1. The Base Case assumes that in the year of surrender, the amount previously expensed will be compared to the actual cost of the permits surrendered and, if necessary, there will be a true-up adjustment (an additional deduction or an income amount).[291] If the nominated permits are used to meet the obligation then there will be no need to make a tax adjustment in year 2 when R(A) makes the surrender. This analysis assumes that the permits were acquired and held by the head office at all times in relation to the activities that have given rise to the compliance obligation. Beta will therefore not assert any taxation rights in relation to this transaction. If the permits were acquired by a PE of R(A) in Beta and then transferred to the head office, the consequences would mirror that described below in relation to a direct linking architecture.

Direct link

Under this direct link arrangement, the scenario assumes that R(A) sets up an account on the Beta Registry in order to purchase permits that will be brought back to meet the compliance obligation in Alpha. The permits are acquired for $100 and originally held on the Beta Registry and, later in year 1, R(A) instructs that the permits be transferred to its account on the Alpha Registry (value at this time $110). Then, in the following year, the permits are surrendered to meet the compliance obligation at a time that they are worth $115. This can be visually represented as follows:

[291] Such a true-up would compare the amount expensed in the compliance year (which would usually be calculated on the basis of the number of permits required and the carrying value of permits on hand plus the market value of any addition permits required) with the carrying value/cost of the actual permits surrendered to meet the obligation. There would be an additional deduction if the extra permits cost more than was estimated and there would be an amount of income if the compliance obligation could be met with permits that cost less than that initial estimate.

Figure 3. Import and surrender



The tax treatment of this scenario under the Base Case assumptions is very straightforward if the presence of R(A) in Beta does not constitute a PE. The enterprise purchases the permits for $100 and these will be included in the accounts as current assets at this value. The compliance obligation in Alpha will be recognised as it accrues (for accounting and tax purposes) and will be valued based on permits held, including those on the Beta Registry. At some point the permits are transferred over to the Alpha Registry and then nominated for surrender. The transfer between registries is not a tax event for either country. Upon surrender the accrued compliance liability will be paid and the current assets will be reduced by the corresponding amount. For tax purposes, only a deduction/expense for the liability of $100 (based on the cost of the permits) will be recognised in year 1 in Alpha. There is no basis for taxation in Beta.

If R(A) does have a PE in Beta through which the permits were acquired, Beta's domestic law will determine if and when taxable profits arise and Beta's rights under the tax

treaty to tax the activities carried on through the PE are determine by using the AOA. The Base Case assumption is that the transfer between the registries is not recognised as a tax event in either country. For financial accounting purposes, the dealing between the PE and the head office of R(A) on the 'transfer' of the permits to the Alpha Registry would be treated as a transaction that would need to be quantified. The PE would have a cost of $100 in the permits (the amount paid in relation to the real transaction to acquire the permits) and deemed proceeds from the dealing with the head office based on a CUP of $110, giving rise to a profit allocation of $10 in year 1. When the head office values the compliance obligation for accounting purposes in year 1, it would probably put its 'cost' in the permits at $110. This reflects what the head office would have incurred had it acquired the permits on market from a third party at this time. For accounting purposes, in year 1, the $110 head office compliance expense would in effect be offset by the accounting $10 profit in the PE, thereby producing a net cost of $100 to the enterprise that reflect the true cost to the firm in meeting the compliance obligation. There is no additional profit or loss in year 2 on surrender.

As the profits taxable in Alpha are determined across the enterprise, the compliance expense deductible to R(A) in year 1 for tax purposes should be the amount actually paid for the permits, $100. Although the AOA would support Beta's right to tax the profits of the PE, under the base case assumptions Beta would not recognise a profit making transaction in relation to these facts.

However, if Beta has a domestic law that recognises outbound intra-enterprise asset transfers (a full recognition approach), then Beta would value the dealing between the PE and the head office for tax purposes and seek to include the $10 increase in value that has accrued by the time of the transfer in the profits of the PE. The AOA would support Beta's right to attribute and tax this profit to the PE. This result strikes one as odd – that there would be a

taxable profit earned by the PE in Beta whilst from the enterprise perspective there is only an expense (the compliance liability). However, both the 2008 OECD Commentary to Article 7 and the revised 2010 Commentary acknowledge that Article 7(2) may result in profits being attributed to a PE even though the enterprise as a whole has not derived any profits.[292] If Alpha does not recognise this intra-enterprise transfer under its domestic law, then there will be no relevant profits to attribute and the PE exemption or FTC could not operate. This is in effect juridical double taxation, where the accrued profit is taxed in the PE host state but the expense of the enterprise in the home state is based only on the historic cost. To avoid double taxation, Alpha could recognise the intra-firm transfer; for example, it could either allow R(A) to value the compliance expense as $110 in year 1, or provide a step up in the cost of the permits to $110 so that an additional true-up deduction of $10 would be available to R(A) in year 2, when the permits are surrendered to meet the compliance expense previously valued at $100. However, it may be unlikely that Alpha would take such as step as it would in effect be sacrificing revenue by allowing an additional deduction for domestic purposes. If the step up is provided, the net tax effect to R(A) is a deduction of $100, but there are timing differences compared to the simple year 1 deduction in the single jurisdiction example: in year 1 there will be deduction of $100 in Alpha but profit of $10 allocated to the PE in Beta; in year 2 there would be a true-up deduction of $10 in Alpha. If the step up were not provided, there would potentially be unrelieved double taxation in the deemed profits attributed to the PE.

If Alpha had adopted Australia's Division 420, the permit import rule is triggered on the transfer between registries and the permits become REUs with a roll-over of cost of $100. At the end of year 2, after the REUs are surrendered, the permits are no longer included in the rolling balance and a deduction for decline in the balance equal to the $100 carrying cost is

[292] OECD 2008 Commentary, Art 7, at [11], and OECD 2010 Commentary, Art 7, at [17].

available—this corresponds with the compliance expense. This is the same result as the Base Case except that the timing of the deduction is deferred until year 2. There should not be any tax implications from Beta's perspective if R(A) does not have a PE in Beta.

If Alpha and Beta have adopted the relevant business activity approach to PE attribution based on actual income and expenses, the only actual transaction is the surrender by the head office in relation to its compliance obligation. This expense will either be available in year 1 under a Base Case approach or year 2 under Division 420 and given that the obligation to surrender permits is due to the GHG producing activities of the head office, it would seem unlikely that any of the expense would be attributed to the PE. There are no profits to consider for attribution to the PE.

In summary, if R(A) does not have a PE in Beta, the difference in tax treatment between the Base Case and a Division 420 approach is simply one of timing—the deferral of the compliance expense until surrender—but this timing disadvantage could be economically significant. More difficult issues could arise if there is a PE in Beta and Beta seeks to tax the accrued profit when the permits are transferred to the head office (full recognition). A step-up in the compliance expense could be one solution but domestic rules like the Division 420 permit import rule in the home state would make such an adjustment more difficult. The result of the operation of particular set of domestic laws would violate inter-firm neutrality and therefore would reduce the efficiency of the permit market.

Indirect link

In this scenario, R(A), which has a compliance obligation in Alpha, sets up an account on the Beta Registry where it acquire the permits for $100. At a time later in year 1, when the permits have risen in value to $110, R(A) transfers the permits to the Alpha Regulator's

account on the Beta Registry and immediately thereafter, the Alpha Regulator issues new shadow permits to R(A) on the Alpha Registry. In year 2, R(A) nominates these permits for surrender.

If R(A) does not have a PE in Beta, only the application of Alpha's domestic rules need be considered. If a roll-over has not been provided, R(A) would recognise a $10 profit when the permits are transformed and the compliance expense available in year 1 will reflect the cost in the permits then on the Alpha Registry, $110. The net deduction of $100 reflects the economic cost to R(A). If a roll-over is provided, there will simply be an expense of $100. On surrender in year 2, there are no further consequences. These outcomes match that under the other linking architectures.

If R(A) does have a PE in Beta, it is likely that Beta will seek to tax the profit realised on the transformation of the permits. As this transaction involves a transfer of the permits to a separate entity (the Alpha Regulator), R(A) will dispose of the Beta permits in exchange for Alpha permits, so the market value of the Alpha permits would be treated as the consideration for the Beta permits, leading to a realisation of any accrued gain or loss in the Beta permits. Beta has the primary taxing right with respect to the $10 profit realised as it would be attributable to the PE under Article 7 and Alpha must take this into account for exemption or FTC purposes. Alpha should allow R(A) a deduction for the compliance expense valued to include the new Alpha permits costing $110 in year 1.

Scenario 5: Receipt of free allocation, export and sale

This scenario analyses the consequences of trading in permits that were allocated for free (a gratis allocation). Based on the level of industrial activity necessary to be entitled to free allocations under the EU ETS and Australia's CPM, and a review of the entities in

Australia that have been granted such assistance, it is highly unlikely that such activities would be undertaken by a PE. It is therefore assumed that the recipient of the free allocation is a company resident in the state where the industrial activities are undertaken. As noted above, the US IRS has taken the view that a free allocation of allowances under the acid rain program is not an income derivation event and a nil cost is appropriate for these assets. The OECD Revised Discussion Draft on Emissions Rights concluded that no jurisdiction treats the receipt of free permits as an income derivation event (apparently without awareness of the approach in Australia) so this is assumed for the Base Case analysis. As this scenario only involves exporting permits, the indirect link architecture is not considered.

In this scenario, a resident of Alpha receives a free allocation that is in excess of what R(A) needs to meet its compliance obligation. Rather than bank the permits, R(A) decides to sell them. If this were to occur wholly within Alpha, the permits would most likely be carried in the accounts with a nil cost and therefore the proceeds realised on sale will be taxable profits. If Alpha has adopted Division 420, the rolling balance method would produce the same tax effect on sale, provided that the no disadvantage rule operated, and this result would also be obtained under the UK's intangible fixed asset regime of the CTA 2009.

Common Registry

The common registry would allow R(A) to directly sell the permits to the third party in Beta. Given the base case assumption of nil cost base, the proceeds of $115 (as profits) would be realised on disposal and would be taxed in Alpha based on R(A)'s residency. As the assumption is that a free allocation would not be made to a PE, the only basis upon which Beta would have a right to tax would be if the internal accounts of the enterprise show a transfer of use of the permits to a PE of R(A) in Beta and then a sale by the PE. This would

be taxed in the same manner as the transfer to a PE under a direct link model and is described below.

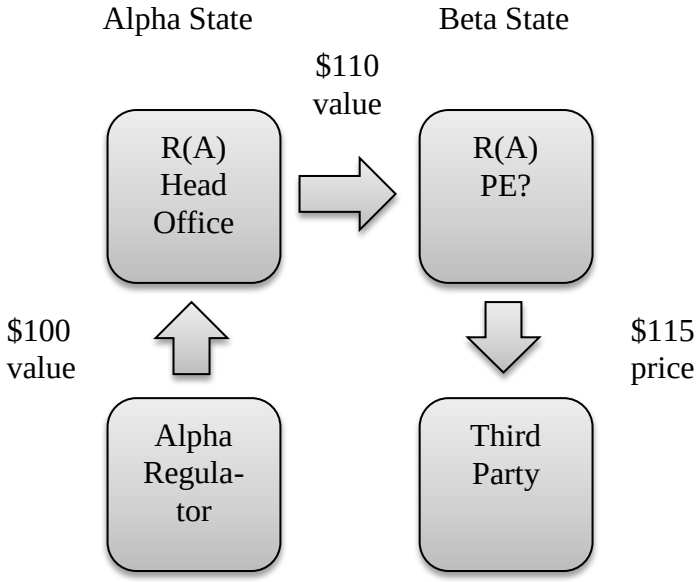
If instead, the receipt of the free allocation is treated as income derivation (akin to a government grant) in year 1 for tax and accounting purposes, the initial income is attributable to those activities of the enterprise that give rise to the right to free permits. Based on the assumptions given, that would be wholly attributable to the operations of R(A) in Alpha. The permits would then be given a market value cost ($100) and, on sale to the third party, profits of $15 would be realised in year 2 and would be attributed in the usual way. Overall, the same total profits are realised under both approaches and the attribution should operate in the same way but there is a timing difference in relation to the initial $100 being taxed up front in those jurisdictions that tax the receipt of free units compared to those that do not. However, if one looks to the net profit of the enterprise rather than gross income and deductions, these differences are minimised because those entities that treat the value of free allocations as income in their accounts generally also accrue the full value of the compliance expense, so on a net basis the only real compliance expense is that in excess of free allocation or, alternatively, the net income is the value of any free permits in excess of the compliance obligation. In comparison, those enterprises that do not treat free allocations as income only show a compliance obligation when this exceeds the allocation (again the net amount). However, a material difference could still arise if the firm has excess free units (which has been the case for a number of firms subject to the EU ETS) and this could impact on efficiency.

Direct link

It is assumed that R(A) sees a better opportunity in the overseas permit market so directs that the permits (with an issue cost of nil but original value of $100) be transferred to

its account on the Beta Registry (valued at $110 at this time). The permits are then sold to an arm's length party for $115 in year 2. This could be illustrated as follows.

Figure 4. Free allocation, export and sale



The transfer between registries is not a taxable event under the Base Case assumptions. The taxable event is the disposal, when the value is realised. As a result, both Alpha and Beta will treat the sale for $115 as the relevant tax event and, given the cost of nil, the whole of the proceeds will be profit/income. If R(A) does not have a PE in Beta, then the profit will only be taxable by Alpha in year 2.

If R(A) does have a PE in Beta, then the profit of $115 will need to be considered for attribution to the PE. Under the AOA, the dealing between the head office and the PE (on the shift across registries) will be priced under the arm's length principle. The head office will be treated as having sold the permits to the PE for $110 so that on sale by the PE for $115, only $5 of the profits will be attributed to the PE. This corresponds to the increase in value at the

time that the PE was the economic owner of the permits. Beta will have the right to tax the $5 and Alpha, on taxing the whole $115 to R(A), must either provide an exemption for the $5 or provide a credit for the tax paid.

If the intra-firm transfer is recognised for tax purposes under Alpha's domestic law, Alpha will assert the right to tax the $110 of profit on the notional disposal in year 1 when the permits are transferred to the PE. This would be supported by the tax treaty on the basis of the residency of R(A). From Alpha's perspective, the enterprise will have a step up in cost base to $110 so that only the additional $5 profit is realised in year 2. Whether or not Beta recognises the intra-firm transfer, it will only have the right to tax $5 of profit attributable under the AOA and realised by the PE in year 2.

If Alpha has adopted Australia's Division 420 approach, the free allocation to R(A) under a mechanism equivalent to Australia's Jobs and Competitiveness Program triggers the no disadvantage rule, meaning that the value of the permits will be nil for the purposes of the rolling balance (in effect not included in income) until after the final surrender date for the relevant allocation, if any of the permits are still held by then. When R(A) transfers the permits to the Beta Registry, the permit export rule is triggered and the market value of the permits ($110) is included in the income of R(A) and taxed in full on the basis of residence. This is an equivalent result to a domestic rule that recognises intra-enterprise transfers of assets but it has far greater application given that the Division 420 export rule applies to all transfers of permits to another jurisdiction rather than only such transfers to a PE or another part of an enterprise. Both of these rules seek to include unrealised profits in income and thereby exacerbate the lock-in effect given the resulting disincentive to transfer permits within the enterprise.

If Alpha has adopted Division 420 but the tax treaty between Alpha and Beta is interpreted under the relevant business activity approach, from Alpha's viewpoint, the actual income of $110 realised on export will be wholly attributable to the head office so only the profit of $5 on sale to the third party in year 2 will be subject to the PE attribution rules and this should be wholly attributed to the PE. From Beta's perspective, the enterprise would only realise a profit when the free permits are sold to the third party in year 2 and the profit is the full $115. As a result, Beta will apply the attribution rule to the whole of the $115. However, it is likely that the application of the relevant business entity approach to either profit amount should only result in $5 being attributed to the PE (taxable in Beta and exempt or creditable in Alpha).

One other variation involves a free allocation to R(A) in Alpha, where the Base Case rules are in place, and a transfer to the Beta Registry then a sale, with the assumption that Beta has Division 420 rules in place. The free allocation is not an income derivation event under the Alpha rules and would have no relevant connection to Beta and therefore is not a taxing point. When the permits are transferred to the Beta Registry, the Division 420 import rule is triggered, the permits become REUs, and the REUs are deemed to have been acquired for cost, which in this case is nil. When sold, the proceeds of $115 are realised as income and, under the Division 420 style rules, deemed to be wholly sourced in Beta. However, under the tax treaty, the profit will be taxable in Beta only to the extent to which it is attributable to a PE. Applying the AOA, only $5 of profit is attributable to the PE (the increase in value whilst held by the PE) and this will operate as a cap to the amount Beta can tax. Alternatively, applying the relevant business activity approach from Beta's perspective involves two taxing points: the first point is the deemed disposal and reacquisition for cost in year 1, which produces nil profit. The second event is the sale of the REUs in year 2 producing the $115 profit. It could be argued by Beta that the $115 is wholly attributable to the PE since the

domestic rules in Division 420 operate to this effect. However, Alpha will seek to attribute the $115 across the head office and the PE. In reality, and for accounting purposes, the majority of the gain is derived by virtue of the receipt of the free allocation and should therefore be attributed to the head office and the PE should only be attributed with the profit that relates to the period that the PE held the benefits and risks of ownership (the $5). Alpha therefore should only be obliged to exempt or provide a FTC for $5 of the $115 profits. If Beta were to assert the right to tax the whole of the $115 this could result in significant double taxation.

Scenario 6: Export and sale in a volatile market

The scenarios thus far have all assumed that there is a gradually increasing market price for emission permits. In order to have the desired effect of reducing emissions over time, ETSs will have a cap of total permits issued each year (by way of auctions and free allocations) that will gradually tighten. As the supply of permits falls, the price for permits is expected to trend upwards. However, as experience with the EU ETS has shown, other factors will influence demand (such as fluctuations in industrial production levels due to economic recession, the use of international credits, and other government policies such as mandated energy efficiency)[293] and the prices on the EU ETS have been shown to be quite volatile and generally trended downwards between 2010 and 2013.[294] This scenario considers variations on Scenario 2 (export and sale) but with fluctuating prices.

[293] European Commission, Commission Staff Working Document, *Impact Assessment accompanying the document Proposal for a Decision of the European Parliament and of the Council concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emissions trading scheme and amending Directive 2003/87/EC* (2014) COM/2014/020 final.
[294] Anita Talberg and Kai Swoboda, *Parliament of Australia Background Note: Emissions Trading Schemes around the World* (Parliamentary Library, 2013) 6.

In order to provide examples of situations where variations in tax treatment can arise, a permit export scenario under a direct linking mechanism (only) is considered with three sets of prices as follows.

Table 3. Alternative permit valuations in a volatile market

Scenario	Purchase price by head office on Alpha Registry	Value on transfer to Beta Registry	Proceeds on sale to third party	Enterprise profit or loss
(a)	$100	$85	$90	($10)
(b)	$100	$105	$90	($10)
(c)	$100	$115	$110	$10

In each case the assumption is that R(A) has acquired the permits. The impact of having a PE in Beta is also considered.

Scenario 6(a)

This variation of the export and sale scenario assumes that the market price of the permits has declined to $85 at the time of the export transfer to the Beta Registry but the price has rebounded to $90 by the time of sale. Under the Base Case, R(A) will recognise a loss of $10 in year 2 that will reduce taxable profits. Under the basic scenario, R(A) does not have a PE in Beta so the profits of R(A) will be solely taxable in Alpha due to the residency of R(A). If Alpha has adopted Division 420, the export of the permits off the Alpha Registry would trigger a deemed realisation by way of income equal to market value ($85) and an effective deduction for the carrying cost ($100), producing a loss of $15 in year 1 to R(A). When the permits are sold in year 2, given the step down in cost to $85 by virtue of the export rule and the proceeds of $90, a $5 profit would be realised by the enterprise in year 2.

Table 4. Comparing Base Case and Division 420 under Scenario 6(a) with no PE

Taxation approach – no PE	Enterprise income or loss	Year 1	Year 2
Base Case	($10)	nil	($10)
Division 420	($10)	($15)	$5

If R(A) does have a PE in Beta and the use of the permits is transferred to the PE, the attribution of profits (and losses) of the enterprise to the PE must be undertaken to determine Beta's taxing rights. Under the AOA, the PE will be taken to have acquired the permits for $85 and therefore should be attributed with a $5 profit on the sale for $90, realised in year 2. In effect, for internal management account purposes, the head office realises a $15 loss but it is emphasised that Article 7 only is relevant for the attribution of profits to a PE—it does not speak to the attribution of profits to the head office or to the operation of domestic law. If the domestic law of Alpha recognises intra-firm transactions, the $15 loss will be available as a deduction to R(A) in year 1 and there will be a step down in the cost of the permits, which mirrors the AOA. Under a relevant business activity approach (RBAA) such as that adopted in Australia, the result may be quite different given that the deemed transaction is not recognised and, rather, the enterprise loss of $10 is considered for attribution. Given that during the period that the permits were held by the PE they increased in value, it is possible that none of the loss would be attributed to the PE (and there is no actual profit to attribute), though this will depend on the calculation.

Table 5. Comparing methods of attributing profits to a PE under Scenario 6(a)

Attribution approach	Enterprise income or loss	PE attribution	Head office attribution*
AOA	($10)	$5	($15)
RBAA	($10)	nil	($10)

*For illustration only. Article 7 does not address head office attribution.

Scenario 6(b)

This variation of the export and sale scenario assumes that the market price of the permits has risen to $105 at the time of export transfer to the Beta Registry but the price has fallen back to $90 by the time of sale. Under the Base Case, R(A) will recognise a loss of $10 in year 2 that will reduce taxable profits. Under the basic scenario, R(A) does not have a PE in Beta, so the profits of R(A) will be solely taxable in Alpha due to the residency of R(A). If Alpha has adopted Division 420, the export of the permits off the Alpha Registry would trigger a deemed realisation by way of income equal to market value ($105) and an effective deduction for the carrying cost ($100), producing a profit of $5 in year 1 to R(A). When the permits are sold in year 2, given the step up in cost to $105 by virtue of the export rule and the proceeds of $90, a $15 loss would be realised by the enterprise in year 2.

Table 6. Comparing Base Case and Division 420 under Scenario 6(b) with no PE

Taxation approach – no PE	Enterprise income or loss	Year 1	Year 2
Base Case	($10)	nil	($10)
Division 420	($10)	$5	($15)

If R(A) does have a PE in Beta and the use of the permits is transferred to the PE, the attribution of profits of the enterprise to the PE must be undertaken. Under the AOA, the PE will be taken to have acquired the permits for $105 and therefore should be attributed with a

$15 loss on the sale for $90, realised in year 2. In effect, for internal management account purposes, the head office realises a $5 profit, thereby producing the overall enterprise loss of $10. If the domestic law of Alpha recognises intra-firm transactions, the $5 profit will be included in R(A)'s taxable income in year 1 and there will be a step up in the cost of the permits, which mirrors the AOA. Under the relevant business activity approach the result may be quite different given that the intra-firm dealing is not recognised and, rather, the enterprise loss of $10 is considered for attribution. Given that during the period that the permits were held by the PE they decreased in value, it is possible that all of the loss would be attributed to the PE.

Table 7. Comparing methods of attributing profits to a PE under Scenario 6(b)

Attribution approach	Enterprise income or loss	PE attribution	Head office attribution*
AOA	($10)	($15)	$5
RBAA	($10)	($10)	nil

*For illustration only. Article 7 does not address head office attribution.

Scenario 6(c)

This variation of the export and sale scenario assumes that the market price of the permits has risen to $115 at the time of export transfer to the Beta Registry but the price has fallen back to $110 by the time of sale. Under the Base Case, R(A) will recognise a profit of $10 in year 2. Under the basic scenario, R(A) does not have a PE in Beta so the profits of R(A) will be solely taxable in Alpha due to the residency of R(A). If Alpha has adopted Division 420, the export of the permits off the Alpha Registry would trigger a deemed realisation by way of income equal to market value ($115) and an effective deduction for the carrying cost ($100), producing a profit of $15 in year 1 to R(A). When the permits are sold

in year 2, given the step up in cost to $115 by virtue of the export rule and the proceeds of $110, a $5 loss would be realised by the enterprise in year 2.

Table 8. Comparing Base Case and Division 420 under Scenario 6(c) with no PE

Taxation approach – no PE	Enterprise income or loss	Year 1	Year 2
Base Case	$10	nil	$10
Division 420	$10	$15	($5)

If R(A) does have a PE in Beta and the use of the permits is transferred to the PE, the attribution of profits of the enterprise to the PE must be undertaken. Under the AOA, the PE will be taken to have acquired the permits for $115 and therefore should be attributed with a $5 loss on the sale for $110, realised in year 2. In effect, for internal management account purposes, the head office realises a $15 profit, thereby producing the overall enterprise profit of $10. If the domestic law of Alpha recognises intra-firm transactions, the $15 profit will be included in R(A)'s taxable income in year 1 and there will be a step up in the cost of the permits, which mirrors the AOA. Under the relevant business activity approach, the enterprise profit of $10 is considered for attribution. Given that during the period that the permits were held by the PE they decreased in value, it is possible that none of the profit would be attributed to the PE.

Table 9. Comparing methods of attributing profits to a PE under Scenario 6(c)

Attribution approach	Enterprise income or loss	PE attribution	Head office attribution*
AOA	$10	($5)	$15
RBAA	$10	nil	$10

*For illustration only. Article 7 does not address head office attribution.

In summary, each of these variations illustrates differences in tax treatment that can arise where there is a fluctuating market price for permits. In the cases where there is no PE in the source state, the difference shown is one of timing when the Base Case is compared to the Division 420 approach. The cases involving a PE illustrate the potential effect of applying a different rule for profit allocation, the AOA versus the relevant business activity approach. Even when only these basic parameters are varied, potentially material differences in tax outcomes may arise, in violation of inter-firm neutrality. By switching the dealings to an import scenario (especially where the permits are initially acquired by a PE) or by changing the end-use of the permits to surrender rather than sale could further complicate the tax outcomes.

Summary

The analysis of the six scenarios shows that the variations in tax burdens across jurisdictions is largely limited to timing differences, especially in those cases that do not involve dealings with a PE. The lock-in effect (created by a nil cost base) that has been identified by various scholars[295] may distort trading decisions and this is magnified by rules that defer the taxation of free permits until realisation. Trading decisions may be further distorted by a Division 420-style export rule that deems a realisation on an outbound transfer if the other jurisdiction does not recognise such a transfer as a disposal. The lock-in effect not

[295] See Margalioth, above n 84; Yale, above n 65.

only deters actual disposals but also deters cross-border transfers, which would have a negative effect on market liquidity.

Where a cross-border permit transaction involves a PE, more significant issues are raised. Firstly, a Division 420-style import rule (that relies on historical cost) has the effect of treating the whole of the gain or loss on the permits as accruing (or being sourced) in the importing state. As a result, there is an argument that neither the tax treaty nor the domestic profit attribution rules would be triggered. If there is a PE in the exporting state, that state would assert the right to tax a portion of the profits attributable to the time the permit was held there. This could result in unrelieved double taxation and would therefore violate inter-firm neutrality. This is most dramatic where the permit that is subject to the import rule has been received by way of a free allocation.

Another problematic area is where a head office imports permits from a PE for the purposes of surrender. This is an issue particular to emission permits as it relates to the tension in accounting and taxation treatment borne from the dual characterisation of permits as assets and the medium to extinguish a business expense. The challenge comes where the PE is taxable on the accrued gain under domestic law (whether by way of a Division 420 export rule or an intra-enterprise dealing rule, where the AOA would support such an allocation) but that gain is never realised by the enterprise due to the head office's identification of the permits for surrender. Suggestions for addressing these issues are provided in the Conclusion.

The analysis for the variations under Scenario 6 illustrates the potential differences in profit attribution under the AOA and the relevant business entity approach. These effects can arise where jurisdictions do not adopt the same approach to profit attribution and are not peculiar to emission permits. The Australian Commissioner of Taxation acknowledged the

problem where the ultimate sales price by an enterprise is less than the transfer price, but suggested that in practice this situation is likely to be rare and would usually, in effect, disappear on application of the aggregation principle.[296] However, this analysis shows that mismatches can arise under a number of conditions and it is currently unclear whether such trading scenarios would be rare. In any event, the technical problem still exists.

6. Conclusions

Differences in the tax treatment of emission permit transactions have the potential to distort the carbon market and thereby undermine its efficiency. One way to test for such distortions is to examine tax outcomes across variable scenarios against the goal of inter-firm neutrality. As the interest in ETSs and cross-scheme linking grows, this analysis must be extended to cross-border transactions. This paper develops an approach to taxing scheme transactions based on general tax principles and compares that to the specific regime designed by Australia to address ETS transactions. These alternative approaches are applied to the hypothetical transactions in order to highlight those areas more likely to cause violations of inter-firm neutrality and also to identify strengths or weaknesses in the alternatives.

Many of the potential disparities in tax outcome identified through the hypotheticals relate to timing—when profit is realised (and therefore taxable) and when expenses or liabilities are deductible. The lack of uniformity in the timing of recognition of profits could largely be eliminated by abandoning the realisation requirement for emission permits and instead prescribing market valuation for all permits held at year end, thereby recognising changes in value in income. A special rule would not be required to bring free allocations into income. If such permits were sold in the year of receipt, the proceeds would be taxable profits

[296] TR 2001/11, above n 243, [4.72].

and if they were still held at year end, the value at that time would be included in profits. As acknowledged by Margaloith, this mark-to-market, inventory-like approach would eliminate the lock-in effect.[297]

The differential in taxation or non-taxation of cross-border transfers and intra-enterprise transfers under domestic law combined with treaty practice would require more significant intervention. The current tax law landscape includes rules that vary from requiring third-party transfers for realisation, to rules that recognise intra-enterprise transfer as realisation events (thereby requiring the participation of two parts of an enterprise, such as the head office and a PE or two PEs), and also to rules that recognise all transfers out of the jurisdiction, whether or not involving a PE (this is reflected in the Division 420 export rule). The Division 420 import rule is clearly not sustainable given the potential for juridical double taxation raised by it. It is suggested that inter-firm neutrality could be preserved if all jurisdictions involved in a linked permit market require all permits (gratis and purchased) to be marked-to-market at year end and the resulting profits are attributed using the AOA model for both domestic law and treaty purposes. However, it is recognised that the PE profit attribution rules are unlikely to be changed simply to accommodate the emission permit market efficiency condition and, therefore, inter-firm neutrality may not be achievable. That said, it is an open question whether the PE attribution rules are or will be a significant issue as there is no available data to suggest whether permit transactions are likely to arise through a PE. It is suggested that the PE attribution issues are theoretically significant but may not be practically significant to linked emission permit markets and addressing the timing issues through a mark-to-market approach may be sufficient to address the remaining inter-firm neutrality concerns.

[297] Margalioth, above n 83, 97.

CHAPTER FIVE: CONCLUSIONS

This thesis was motivated by a gap in the taxation law literature examining the role of income tax in relation to carbon emission permit trading. The economic arguments in support of emissions trading assert that is it an economically efficient mechanism to achieve reductions of carbon emissions at the lowest cost. There may, of course, be several barriers to carbon market efficiency and taxation was identified as potentially one. However, the issue of the taxation of emission permit transactions had received only limited academic attention to date and the impact on carbon market efficiency has only been examined in any detail in law and economics literature on the basis of assumptions regarding taxation systems. Given the growth in emissions trading systems and the compelling arguments that support the linking of such systems, it is important that taxation considerations be more fully explored.

The work of Constantini et al shows that taxation systems have the potential to violate the cost effectiveness of international emissions trading systems (ETSs) by distorting the equilibrium permit price and abatement activities but these results are, as acknowledged by the authors, not based on actual taxation.[1] The theoretical model developed by Kane[2] shows that carbon market cost efficiency can be preserved when the taxation laws allow for either inter-firm neutrality or intra-firm neutrality to be maintained. This thesis tested whether the actual tax laws in operation in relation to carbon permit transactions meet the requirement of inter-firm neutrality in a linked market situation. To meet this objective required firstly an identification of the relevant transactions, then a determination of which taxation laws apply to such transactions and, finally, a systematic examination of the resulting tax treatment.

[1] Valeria Constantini, Alession D'Amato, Chiara Martini, Maria Cristina Tommasino, Edilio Valentini and Mariangela Zoli, 'Taxing international emissions trading' (2013) 40 *Energy Economics* 609-621.
[2] Mitchell A Kane, 'Taxation and Multi-Period Global Cap and Trade' (2011) 19 *NYU Environmental Law Journal* 87.

Although it is expected that there will be variations on the face of the tax laws across jurisdictions, it is the consequences of these provisions that is relevant to the neutrality test so it was necessary to examine the impact of those laws on the relevant transactions in order to determine if there was like tax treatment.

Although the ultimate goal of this thesis was to examine the tax consequences of international permit transactions, several layers of analysis were necessary to get to this final stage. As a preliminary matter, the determination of the form of the international permit transactions in practice required first an appreciation of operation of domestic emissions trading systems and then the alternative architectures for linking such schemes. This thesis focused on the European Union Emissions Trading System (EU ETS) and Australia's now repealed Carbon Pricing Mechanism (CPM) as two relevant examples of the design of emissions trading schemes generally as well as indirect and direct linking mechanisms, based on the work that had been undertaken to negotiate the now abandoned link. To illustrate a third linking model based on a common registry, consideration was also given to the design of the California-Quebec linked scheme.

The other, more complex task was the determination of the relevant tax laws and their consequences when applied to these environmental policy mechanisms. Reaching the ultimate goal of international tax consequences required several layers of analysis. The starting point would seem naturally to have been the domestic tax law of the sample jurisdictions (Australia and the United Kingdom), but this proved to be initially elusive given that the UK, like many other jurisdictions, takes accounting profits as the starting point for determining taxable profits and there is currently no settled view in relation to the appropriate financial accounting for carbon trading transactions. Given that the goal of this thesis was to examine the actual tax treatment of the relevant transactions, it was critical that the analysis

therefore began with accounting treatment. The thesis therefore proceeded as follows: the first study determined the actual accounting treatment adopted by entities; this accounting treatment then fed into the second study that examined domestic tax regimes in relation to domestic trading transactions; and the domestic tax law then combined with tax treaty law in the third study to determine the tax treatment of international trading transactions within linked schemes. In all of these contexts, conclusions can be drawn with regard to potential disparities in the tax outcomes faced by firms participating in the schemes, which therefore would give rise to a violation of inter-firm neutrality and potentially a negative impact on the efficiency of the carbon market.

1. Findings

ETSs around the world generally share a number of fundamental design elements that therefore give rise to similar concerns from a tax law perspective. From an examination of the EU ETS documentation and the legislation in the UK and Australia regarding their respective schemes, and with reference to the literature, three key tax issues were identified: the treatment of free allocations; the timing and valuation of the compliance expense; and the asset characterisation of permits (ie inventory, business/revenue asset or capital asset). The examinations of both accounting practice and the taxation treatment of domestic emission permit transactions were guided by these three main revenue issues. The treatment of free allocations could be viewed, from both an accounting and a tax perspective, as the receipt of a government grant, given that the recipient has received valuable property gratis. Ordinarily such a receipt would be viewed as an income event but a realisation basis of accounting could require that the permits be sold (realising their value) before the income is recognised and therefore, in the interim, the permits are held with a nil cost base and this income would not be immediately recognised. This treatment can apply for accounting as well as tax purposes.

Although this is a timing difference, given the potential for unlimited deferral, the tax value of this timing difference could be substantial, highlighting what Kane referred to as the time dimension over which tax can distort behaviour. In the case of the compliance expense, the timing issue turns on whether the liability under the ETS is recognised as it accrues or on a cash basis, when the permits are surrendered to meet the liability. The valuation of the liability is also an issue when an accruals basis applies. Finally, the characterisation of the permits as an asset type will impact on whether and when changes in value are recognised, with the greatest flexibility applying in the case of an inventory characterisation. To control the scope of the thesis, the relevant taxpayers were limited to companies who were participants in the relevant ETS (that is, companies with compliance obligations).

Commencing with the investigation of accounting treatment, the content analysis method was employed and data was collected from a sample of 62 high emitting entities operating in the EU that disclosed their accounting practices in relation to carbon permits in their published accounts. The results as reported in Paper 1 indicated that, consistent with earlier studies,[3] there is no consensus or even a majority approach in the accounting practice of these entities. However, a close analysis of the results revealed that there are patterns of practice emerging with the greater maturity of the EU ETS. A significant proportion of entities are adopting what was coined the 'net liability approach' which features the classification of permits as intangible assets, free allocations recorded at nil value and the emissions liability reflecting only those emissions in excess of the free allocation. A slightly less popular approach is a 'gross liability approach' based on a modified version of the IFRIC 3 recommendations. This approach also classifies permits as intangible assets but records free

[3] Heather Lovell, Thereza Sales de Aguiar, Jan Bebbington and Carlos Larrinaga-Gonzáles, *Accounting for Carbon* (Research Report No 122, Association of Chartered Certified Accountants, 2010); PricewaterhouseCoopers and the International Emissions Trading Association, *Trouble Entry Accounting – Revisited* (International Emissions Trading Association, 2007); and Peter Warwick and Chew Ng, 'The "Cost" of Climate Change: How Carbon Emissions Allowances are Accounted for amongst European Union Companies' (2012) 22(1) *Australian Accounting Review* 54.

allocations at fair value and shows the full value of the emissions liability. It was noted that in a situation where the emissions liability exceeds the free allocation, these two approaches would show the same (net) expense. However, there would be significant differences in the accounting reports in cases where firms are in an excess allowance position, where only those firms recording free allocations at fair value would have reportable income. The European Commission has recognised that excess allowances have built up in the EU ETS since 2009 (so this problem is a real one) and have worked to reform the scheme to address this.[4] A third, less popular but still significant approach classifies permits as inventory, where free allocations are given a nil value and the net emissions liability is reflected in the accounts. In comparison, the first two approaches adopted the intangible asset characterisation for permits. As inventory and intangible assets are treated differently for accounting purposes with respect to, for example, recognising changes in value, this difference in characterisation can result in differences in recognised profits. For the purposes of the next stage of the analysis, the first and second approached based on intangible asset characterisation, being the most popular, were used as the starting point for the tax law analysis in Paper 2.

The results described in Paper 2 revealed the practical implications of adopting different approaches to taxation of domestic emission permit transactions. The sample jurisdictions represent two quite different perspectives and therefore provided a vivid example of potential disparities in treatment which could therefore lead to a violation of inter-firm neutrality and a negative impact on the efficiency of the carbon market. As the UK tax law does not contain specific provisions to deal with the EU ETS, the rules of general application were analysed to determine the tax outcomes. Under the UK Corporation Tax,[5] the accounting profits from business are the starting point for determining chargeable profits

[4] European Commission, *Structural reform of the EU ETS* (2016) <http://ec.europa.eu/clima/policies/ets/reform/index_en.htm>.
[5] *Corporation Tax Act 2009* (UK).

(the corporate tax base), with adjustments made where required by law. By virtue of the characterisation of permits as intangible fixed assets, a special tax regime is triggered which requires certain adjustments to be made. The Australian Government, in contrast, made a policy decision that the income tax rules specifically designed for ETS transactions[6] would apply to all firms engaged in the market. Within a wholly independent ETS, this approach should ensure consistency of tax treatment, unlike the UK approach which allows differences in accounting treatment to flow through into the tax accounts.

In effect, both the UK and Australian tax regimes provide revenue treatment for scheme transactions (gains are income in nature and losses and expenses are deductible against income/profits). However, there is a significant distinction in the treatment of the compliance expense. The UK tax law, based as it is on financial accounting, recognises the liability on an accruals basis (during the compliance year) whilst the Australian tax law approach only allows the expense in the year in which the relevant permits are surrendered which, based on the compliance timeline, is generally in the following year.[7] Given the time value of money, the compliance expense is effectively greater in Australia as a result of the deferral of the deduction. This is a difference in tax outcome that highlights both the time and space margins over which tax distortions can arise given that a firm will compare the (after-tax) cost of its abatement options to this after-tax cost of a permit in determining whether to abate or purchase/hold a permit.

Another difference in tax treatment relates to free allocations. In those cases where the netting approach for accounting has fed into the taxable profits under the UK law, the recognition of the value of free allocations in profits is effectively deferred until disposal, effectively an indefinite deferral. This would give rise to the so-called 'lock-in effect' which

[6] *Income Tax Assessment Act 1997* (Cth) Div 420.
[7] Although the Carbon Pricing Mechanism allowed for early surrender, it was considered unlikely that this option would be taken up in practice.

distorts decision making with respect to whether to continue to hold a given investment asset. The Australian default rule is to treat the value of free allocations as income upon receipt, but the important 'no disadvantage rule' exception provides a limited deferral until after the relevant surrender date, so only if free allocations are banked beyond this date is the income realised. Under the CPM, free allocations were provided as a short-term transitional measure for coal-fired electricity generators and were to be provided on an ongoing basis as part of the energy-intensive trade-exposed (EITE) industry assistance program. As the no disadvantage rule was available to all recipients under the EITE program, in the medium term deferral would have become the default rule. The difference in approach is therefore only apparent where a free allocation is banked beyond the period for which it was granted (at this time the value of the free allocation is picked up in the rolling balance under the no disadvantage rule) but the tax consequences are significantly different if such a situation arises, given that the UK rules do not include a similar rule. Revaluations are also recognised differently with the UK tax laws only allowing write downs to be expensed whilst the Australian laws provide the option to recognise revaluations on an annual basis for tax purposes. These results show that, even in relation to the relatively simple domestic permit transactions, disparities in tax treatment will arise when comparing the two tax systems and therefore inter-firm neutrality would be violated if the ETSs were to link.

With this domestic tax treatment as the foundation, Paper 3 considered the principles and practices of international tax law and tax treaty practice to determine if inter-firm neutrality would be achievable under linked ETSs that therefore allowed for cross-border permit transactions. In order to move beyond domestic permit transactions, the consideration of the three linking architectures (being common registry, direct link and indirect link) gave form to the international permits transactions and highlighted the important role of the scheme registry accounts. From this, six hypothetical transactions were developed as the

basis of the tax analysis. In addition to variations in domestic law already illustrated in Paper 2 and the special permit import and export rules developed by Australia, variations in tax treaty practice were also identified. This led to a discussion of the different provisions of the OECD Model[8] that may be triggered in relation to these transactions. This covered Article 7 (business profits), Article 13 (capital gains) and Article 6 (income from immovable property) of the OECD Model. Particular emphasis was placed on the alternative approaches to the attribution of profits of a multinational enterprise to a permanent establishment (PE) under Article 7.

With respect to the hypothetical international permit transactions, the analysis revealed a number of instances where differences in domestic law and/or tax treaty practice can lead to timing differences in the recognition of income and expenses. Although the relevant foreign tax credit or exemption mechanism should still prevent double taxation, the difference in the timing of the tax events across firms and jurisdictions may be commercially significant and may therefore distort decision making and undermine the efficiency of the linked carbon market. In light of the goal of inter-firm neutrality, these inconsistencies could be largely eliminated if both permits and compliance obligations were subject to market valuation at year-end, thereby abandoning the realisation requirement, but this would represent a major shift in tax policy for many jurisdictions.

Of greater concern are those cases of potential unrelieved double taxation revealed by the analysis in Paper 3 that may arise from different domestic law approaches to inter-jurisdictional and intra-entity asset transfers and which may be further complicated by differential interpretations of the PE profit attribution rules under the relevant tax treaties. The permit import rule adopted in Australia, which seeks to deem the entirety of any gain on a permit to be Australian sourced, is particularly problematic and such a rule is not

[8] OECD, *Model Tax Convention on Income and on Capital* (2014).

recommended given that it is clear violation of inter-firm neutrality and would distort a linked scheme and undermine its efficiency. The additional difficulties identified as arising from different approaches to the attribution of profits to PEs are system-wide issues that are unlikely to be resolved in the short term. These rules may therefore also represent a barrier to inter-firm neutrality and ETS efficiency.

What is clear from the findings of this thesis is that there are a significant number of aspects of the tax treatment of carbon trading transactions that are likely to lead to participating firms being subject to inconsistent tax outcomes in violation of the inter-firm neutrality objective and therefore these tax rules will undermine the efficiency of any linked carbon markets. These diverse outcomes are apparent across all three tax issues of free allocations, expense recognition and asset characterisation and all levels of the tax systems, from accounting treatment to domestic tax laws to tax treaty implications. Although complete harmonisation may not be achievable, consideration should be given to eliminating some of the more significant distortions being produced by the tax systems.

2. Contributions and Implications

The ultimate conclusion of this thesis is that, under the taxation laws analysed for these purposes, the goal of inter-firm neutrality in relation to the taxation of emission permit transactions cannot be achieved and, therefore, this may be a barrier to achieving efficiency in a linked carbon market. There is currently a lack of uniformity in treatment and outcomes at multiple levels that impact on this result. This thesis shows a lack of consistency in accounting treatment, domestic tax law, the tax treatment of cross-border intra-firm transfers of assets and the attribution of enterprise profits to permanent establishments.

This conclusion does not mean that ETSs should not be linked but rather that policy makers should consider the operation of their tax systems when making a decision to join or

establish a linked scheme. The differences in taxation may or may not be deemed material, depending on the tax law frameworks in place in the jurisdictions, but it is critical that the analysis be undertaken in order to make such a judgment. This thesis shows that there are some circumstances where significant differences in timing and tax burden can arise and it may be determined that amendments to the tax legislation are warranted to remove the worst of these discrepancies and thereby reduce the extent to which taxation would interfere with the efficiency of the linked scheme.

There are distinct advantages to adopting a specific set of tax rules such as those enacted by Australia so as to eliminate some of the differences in tax consequences that can arise from relying too heavily on accounting treatment, given its current lack of certainty as well as the inherent flexibility allowed in some accounting standards. However, a significant weakness in the current Australian rules comes from the deferral of the compliance expense until permit surrender where an accruals basis would be preferable—allowing a deduction for the compliance expense in the compliance year based on a best estimate of its value and a true-up adjustment in the surrender year.

The issue of non-recognition of free allocations (whether by adopting a nil basis for accounts or applying the no disadvantage rule) raises the issue of the lock-in effect but in the case of emission permits the situation is different. Given the link between the treatment of the free allocation as government grant income (or not) being offset by the recognition of the gross compliance expense (or the net expense), the nil value treatment is only significantly problematic where there is an excess of free permits. If the free allocation does not cover the compliance obligation, under both systems a net expense for the value of permits above the allocation will be recognised. Given the dangers of over allocation that have been identified in the early phases of the EU ETS, it is submitted that regulators are less likely to allow a

similar situation to arise again and therefore this tax issue is also less likely to arise in practice.

In deciding whether to include specific tax rules to address cross-border permit transfers, such as the Australian permit import and permit export rules, the full implications of such measures must be considered. On their face, the Australian rules suggest that a primary consideration is revenue protection. However, when one considers that a carbon linking partner is also likely to be a tax treaty partner, it is necessary to consider the extent to which such provisions will be overridden by the treaty. Those provisions that do maintain their effectiveness under the treaty may give rise to distortionary effects, such as was revealed in relation to the Australian permit import rule. Although it could be seen to be an extreme response, many of these issues could be eliminated by the abandonment of the realisation requirement for the recognition of changes in the value of permits and instead require annual revaluations of permits on hand.

3. Limitations and Suggestions for Future Research

In order to control the scope of this thesis, the thesis question was designed with a number of limitations but these limits provide a number of opportunities for further research. First, the scope of the study was largely limited to the laws of the United Kingdom and Australia, with passing reference to certain features of United States tax law. Both the UK and Australia are common law countries and it would be of interest to extend the consideration of these issues to a civil law jurisdiction. Second, the thesis only examined the impact of federal level income taxes and did not take into account state level taxes (as could be particularly relevant under the California-Quebec scheme as these sub-national states both collect income tax), value added taxes or other transaction-based taxes. There were also limits placed on the form of entities, with only the taxation of entities in corporate form being

considered, and limits on the type of engagement with the ETS, the emphasis being on those entities with compliance liabilities. As noted in Chapter One, the scope of the analysis in this thesis excluded entities involved in carbon markets solely for trading purposes and an interesting extension would consider the accounting and tax treatment of carbon traders as well as entities in other forms, such as collective investment vehicles, transparent or flow-through entities (such as trusts) and partnerships.

On a more fundamental level, it must be noted that this thesis has only tested one of the pathways to efficiency suggested by Kane: that of inter-firm neutrality with respect to the taxation of permits. Kane's theory also suggests that inter-firm neutrality should also exist in relation to costs of abatement. A further study could test the tax treatment of abatement or analyse the alternative pathway to the efficiency goal, being intra-firm neutrality. This condition requires that firms face the same tax treatment in respect of costs of abatement and permit costs. It is possible that a full consideration of this alternative could lead to the conclusion that achieving intra-firm neutrality is more attainable than inter-firm neutrality.

The findings and recommendations of this thesis have a continued, if not growing, relevance. The recent work of Ranson and Stavins reveals a significant preference for linking ETSs in the context of recent UNFCCC negotiations.[9] More specifically, the new Paris Agreement,[10] with its reliance on domestic measures to achieve 'nationally determined contributions', sets the stage for greater use of bottom-up strategies such as domestic ETSs. This trend is already being evidenced by the growth in national and sub-national schemes as reported by the World Bank annual report on the carbon market[11] and recent government announcements evidencing a desire to explore linking, such as the Government of Ontario,

[9] Matthew Ranson and Robert N Stavins, 'Linkage of greenhouse gas emissions trading systems: learning from experience' (2016) 16:3 *Climate Policy* 284.
[10] UNFCCC, *Adoption of the Paris Agreement, Proposal by the President*, FCCC/CP/2015/L.9/Rev.1 (12 December 2015).
[11] World Bank, *State and Trends in Carbon Pricing 2015* (2015).

Canada, signalling its intention to link with Quebec and California after its cap and trade system commences on 1 July 2016.[12] In light of these developments, this 'seemingly overlooked' or underappreciated aspect of the functioning of carbon markets deserves increased consideration and this thesis aims to contribute to this effort.

[12] Ministry of the Environment and Climate Change, Ontario, 'Reducing Greenhouse Gas Pollution Through Cap and Trade' (Press Release, 8 June 2016).

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