

ARTICLE

Taxation of Cross-Border Transfers of Carbon Emission Allowances under Linked Emissions Trading Schemes

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Abstract

Economic arguments in support of linking emissions trading schemes suggest that such linking could provide access to lower cost abatement options and increase market stability. The decisions of whether and how to link emissions trading schemes often focus on the design features of the relevant schemes, but an additional factor which has the potential to undermine the efficiency of linked schemes is taxation. This article systematically tests two alternative approaches to the direct (income) taxation of cross-border transfers of emission allowances for differential tax outcomes. Four hypothetical transactions are considered under three different linking mechanisms and on the assumption that a tax treaty based on the OECD Model Tax Convention on Income and on Capital is in force. This analysis evidences that, in some cases – and especially if the relevant jurisdictions adopt different approaches to the taxation of allowance transactions under domestic law – there is the potential for timing differences or double taxation that could impact on the efficiency of the linked trading schemes. It is therefore important for tax implications to be considered as part of any linking proposal.

Keywords: Emissions trading schemes, Carbon trading, Linking emissions trading schemes, International tax, Carbon emission allowances

1. INTRODUCTION

Greenhouse gas (GHG) emissions are a negative externality in that GHG producers do not face the full cost of their actions.¹ Correcting this market failure requires that the externality be internalized and calls for the adoption of policy alternatives such as direct regulation, carbon taxes and emissions trading.² The Organisation for

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¹ N. Stern, *The Economics of Climate Change: The Stern Review* (Cambridge University Press, 2007), p. 349.

² *Ibid.*

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,³ a conclusion supported by detailed analysis of the potential effectiveness of alternative policy options undertaken by the International Monetary Fund (IMF).⁴ 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’.⁵ A recent World Bank report evidences the continued growth of carbon pricing at a national and sub-national level.⁶ Within this general context, this article focuses on one aspect of carbon pricing design: the interaction of emissions trading schemes (ETSs) 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 at minimum cost by allowing the market to achieve an equalization of marginal abatement costs across firms.⁷ Maximum emissions reductions can be obtained with minimal cost to the economy and, as Kane puts it, ‘the bigger the market the better’.⁸ 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’.⁹ Expanding the market through 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.¹⁰ Although Kyoto-II global trading would have certain advantages,¹¹ the creation of such an international market has thus far proved to be elusive.¹² However, in light of the landmark Paris

³ Organisation for Economic Co-operation and Development (OECD), ‘Climate and Carbon: Aligning Prices and Policies’, Environment Policy Paper No 1, Oct. 2013, p. 9, available at: http://www.oecd-ilibrary.org/environment-and-sustainable-development/climate-and-carbon_5k3z11hjg6r7-en.

⁴ R.A. de Mooij, M. Keen & I. Parry, *Fiscal Policy to Mitigate Climate Change* (IMF, 2012).

⁵ *Ibid.*, p. 21.

⁶ The World Bank, ‘State and Trends of Carbon Pricing 2016’, p. 11, available at: http://www.ecofys.com/files/files/wb_report_2016_161018_screen.pdf. Thomson Reuters also confirms an increase in the coverage of carbon markets, although the overall volume declined in 2015 compared with 2014 levels. A notable future development will be the launch of the national market in China in 2017: Thomson Reuters, ‘Carbon Market Monitor: Review of Global Markets in 2015 and Outlook for 2016–2018’, 11 Jan. 2016, available at: <https://climateobserver.org/wp-content/uploads/2016/01/Carbon-Market-Review-2016.pdf>.

⁷ C. Flachsland, R. Marschinski & O. Edenhofer, ‘Global Trading Versus Linking: Architectures for International Emissions Trading’ (2009) 37(5) *Energy Policy*, pp. 1637–47, at 1638–9.

⁸ M.A. Kane, ‘Taxation and Multi-Period Global Cap and Trade’ (2011) 19(1) *NYU Environmental Law Journal*, pp. 87–145, at 87.

⁹ *Ibid.*

¹⁰ Flachsland, Marschinski & Edenhofer, n. 7 above, p. 1637. A similar distinction was made in J. Jaffe, M. Ranson & R. Stavins, ‘Linking Tradable Permit Systems: A Key Element of Emerging International Climate Policy Architecture’ (2007) 36(4) *Ecology Law Quarterly*, pp. 789–808.

¹¹ Flachsland, Marschinski & Edenhofer, n. 7 above, p. 1641.

¹² The Kyoto first commitment period expired in 2012. An amendment to the Kyoto Protocol (n. 64 below) to establish a second commitment period (to expire in 2020) was adopted in Doha (Qatar) in Dec. 2012, but requires acceptance by three-fourths of the parties (144 instruments of acceptance) before it enters into force. As of 9 Nov. 2016, only 73 countries had ratified the Doha Amendment: United Nations Framework Convention on Climate Change (UNFCCC) Secretariat, ‘Status of the Doha Amendment’, available at: http://unfccc.int/kyoto_protocol/doha_amendment/items/7362.php.

Agreement¹³ and the potential to rely on markets to achieve states' nationally determined contributions (NDCs), bottom-up approaches – such as linking ETSs which have been established unilaterally at a national or sub-national level – can provide access to lower cost abatement options and greater market stability in the absence of a global scheme.

Ranson and Stavins have recently considered the many economic, strategic and political factors that may influence the decision to link,¹⁴ and much of the literature to date focuses on the compatibility of scheme design features, such as coverage, free allocation mechanisms and price controls.¹⁵ However, an important compatibility issue that has been 'seemingly overlooked' to date is the application of taxation laws to transactions under the schemes, even though tax implications have the potential to interfere with the efficient operation of linked schemes.¹⁶ The recent work of Costantini and co-authors confirms that only a few contributions to date deal explicitly with taxation of emissions trading revenues,¹⁷ referring specifically to the work of Fischer,¹⁸ Yale,¹⁹ and Kane.²⁰ A 2010 report by Copenhagen Economics found 'little evidence that the current construct of [European Union (EU)] national taxes and bilateral OECD based bilateral [sic] tax treaties will lead to significant malfunctioning of the [EU] ETS system',²¹ but the models developed by Costantini and colleagues support the opposite conclusion that price and welfare impacts of permit taxation are significant.²²

This article aims to contribute to this literature by adopting a legal doctrinal approach to determine the tax treatment of cross-border emissions trading and thereby identify potential instances of differentiated tax treatment, which could feed into any future modelling of cost efficiency impacts. This involves an examination of the interaction of alternative tax law approaches to the relevant carbon trading transactions as well as alternative linking mechanisms, and thus goes beyond the Copenhagen Economics work, which was concerned

¹³ Paris Agreement, Paris (France), 13 Dec. 2015, in force 4 Nov. 2016, UNFCCC Secretariat, Decision 1/CP.21 'Adoption of the Paris Agreement', UN Doc. FCCC/CP/2015/10/Add.1, available at: <http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>. Art. 6 recognizes the role of both market and non-market approaches to mitigation of emissions and sustainable development.

¹⁴ M. Ranson & R. Stavins, 'Linkage of Greenhouse Gas Emissions Trading Systems: Learning from Experience' (2016) 16(3) *Climate Policy*, pp. 284–300.

¹⁵ See, e.g., S.E. Weishaar, *Emissions Trading Design: A Critical Overview* (Edward Elgar, 2014), p. 194; W. Sterk & R. Schüle, 'Advancing the Climate Regime through Linking Domestic Emission Trading Systems?' (2009) 14(5) *Mitigation and Adaptation Strategies for Global Change*, pp. 409–31.

¹⁶ V. Costantini et al., 'Taxing International Emissions Trading' (2013) 40 *Energy Economics*, pp. 609–21, at 609.

¹⁷ *Ibid.*, p. 610.

¹⁸ C. Fischer, 'Multinational Taxation and International Emissions Trading' (2006) 38(2) *Resource Energy Economics*, pp. 139–59.

¹⁹ E. Yale, 'Taxing Cap and Trade Environmental Regulation' (2008) 37(2) *Journal of Legal Studies*, pp. 535–50.

²⁰ Kane, n. 8 above.

²¹ S. Nass-Schmidt et al., *Tax Treatment of ETS Allowances: Options for Improving Transparency and Efficiency* (Copenhagen Economics, 2010), p. 62.

²² Costantini et al., n. 16 above, p. 610.

solely with the single carbon market of the EU Emissions Trading System (EU ETS). Once the instances of differentiated tax treatment are identified, future work will be able to examine the potential economic impacts of these differences and determine if they are significant and, therefore, if there is a case for taxation law reform.

This article uses as its starting point Kane's analysis with respect to approaches to maintaining 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 incentives to undertake only those abatement decisions inside the efficient set.²³

Kane identifies two alternative pathways to maintaining abatement cost-efficiency within a tax system: (i) inter-firm neutrality (where allowances are taxed in the same fashion across firms and abatement costs are also treated in the same way across firms), and (ii) intra-firm neutrality (where the firm faces the same tax treatment for allowances and abatement costs).²⁴ This article seeks to test one aspect of this matrix: whether there is consistency (neutrality) in the tax treatment of allowance transactions across firms or whether, instead, the tax systems produce differentiated tax outcomes. For the purposes of the article, the criterion being tested will be referred to as 'inter-firm consistency'. A violation of the goal of inter-firm consistency in a multi-jurisdictional context could include outcomes such as double taxation or double non-taxation, as well as timing differences. In addition to a set of model tax rules drawn from current general tax principles, the analysis evaluates the taxation regime established for the purposes of Australia's now repealed emissions trading system as well as the impact of tax treaties. The article does not address issues raised by differential company tax rates and their impact on profit shifting by multinationals.²⁵ Australia currently is the only country with a comprehensive taxation regime for carbon trading transactions.²⁶ Any weaknesses in the Australian approach should be identified if this regime is to be considered a potential model for other jurisdictions seeking to provide certainty in tax outcomes. Although Australia's ETS was repealed,²⁷ the tax rules were not and the so-called 'safeguard mechanism' within Australia's replacement climate policy instrument is, in effect, a weak baseline and credit system which relies on tradeable carbon units,

²³ Kane, n. 8 above, pp. 90–1.

²⁴ *Ibid.*, pp. 101–2.

²⁵ For an analysis of this issue see, e.g., H. Huizinga & L. Laeven, 'International Profit Shifting within Multinationals: A Multi-Country Perspective' (2008) 92(5–6) *Journal of Public Economics*, pp. 1164–82, and the studies cited therein.

²⁶ New Zealand created some specific rules for the treatment of carbon units but otherwise allowed the general tax treatment to operate, e.g., Income Tax Act 2007 (New Zealand), ss CB 36, DB 60, DB 60A: C. Black, 'Tax Accounting for Transactions under an Emissions Trading Scheme: An Australasian Perspective' (2011) 5(1) *Carbon & Climate Law Review*, pp. 91–9.

²⁷ Clean Energy Legislation (Carbon Tax Repeal) Act 2014 (Cth), with effect from 1 July 2014.

thereby enlivening the tax rules.²⁸ The advantages of the Australian approach are simplicity and consistency in the tax treatment of carbon market participants but, as the analysis below shows, some features of the approach will be simply overridden by a tax treaty, and other aspects have the potential to create undesirable timing differences or instances of double taxation.

This article begins by providing the necessary context. Section 2 discusses three mechanisms for direct ETS linking, with reference to the linking arrangements between the trading schemes of California (United States (US)) and Quebec (Canada), and the preliminary work on developing the now abandoned link between Australia's Carbon Pricing Mechanism (CPM)²⁹ and the EU ETS.³⁰ The mechanism for linking is important as it dictates the form of the relevant ETS transactions and therefore the tax consequences. Section 3 provides a brief discussion of the approaches to taxing cross-border ETS transactions from the perspective of holding emission allowances as business assets, and identifies an approach to allowance taxation based on ordinary tax principles, referred to as the 'Base Case'. This is compared with the special tax regime established in Australia. Section 3 also analyzes the international tax law principles applicable to cross-border emission allowance transactions and considers the implications of the OECD's Model Tax Convention on Income and on Capital (OECD Model).³¹ Section 4 applies the tax rules to four hypothetical cross-border allowance transactions. Each hypothetical is considered under the alternative linking architectures as well as under the Base Case versus Australian tax rules. The analysis of these various scenarios is designed to identify those cases where the operation of the taxation rules results in a violation of intra-firm consistency. In conclusion, an overall evaluation of the current international tax regime against the criterion of inter-firm consistency is provided.

2. ARRANGEMENTS FOR DIRECT SCHEME LINKING

The goal of this article is to analyze the taxation consequences of cross-border emission allowance transactions in light of the objective of inter-firm consistency in order to thereby identify the strengths and weaknesses of current taxation regimes. In the absence of a top-down global ETS, independent schemes can be linked directly or

²⁸ Australian Government, 'The Safeguard Mechanism: Overview' (2016), available at: <https://www.environment.gov.au/climate-change/emissions-reduction-fund/publications/factsheet-erf-safeguard-mechanism>. The safeguard mechanism came into operation on 1 July 2016 and covers roughly half of Australia's emissions: *ibid*.

²⁹ The main elements of the CPM were established by the Clean Energy Act 2011 (Cth).

³⁰ The EU ETS was established by Directive 2003/87/EC Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community and Amending Directive 96/61/EC [2003] OJ L 275/25 (ETS Directive); and amended by Directive 2004/101/EC 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 [2004] OJ L 338/18 (Linking Directive).

³¹ OECD, Model Tax Convention on Income and on Capital 2014 (OECD Model), available at: <http://www.oecd.org/tax/model-tax-convention-on-income-and-on-capital-2015-full-version-9789264239081-en.htm>. 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 article, a reference to the 'OECD Model' refers to the most recently updated version of 2014.

indirectly as a bottom-up approach. Haites draws on recent experience to distinguish the three commonly recognized types of link: (i) a unilateral (direct) link; (ii) a bilateral (direct) link; and (iii) an indirect link.³² An indirect link relies on an ETS having a link with another ETS that itself has a link with a third ETS, forming an indirect link between the first ETS and the third ETS. Indirect links are not considered in this article. Rather, the article focuses on direct links between ETSs that may be bilateral (allowing for two-way transfers of allowances) or unilateral (allowing only one-way transfers into a scheme). Three alternative mechanisms for direct linking are described below and form the basis for the tax analysis that follows.

Given the intangible nature of emission allowances, an entity's registry account is key as it provides evidence of ownership. Allowances acquired through an auction process or issued freely under an industry assistance programme are directly credited by the regulator to the entity's account on the registry. From this account, the entity can nominate allowances to be surrendered to meet compliance obligations and over-the-counter sales will be recorded as transfers from the seller's registry account to that of the purchaser. The movement of allowances between registry accounts will often signal a change in holding which may trigger tax consequences.

2.1. Bilateral Link – Common Registry

Under a bilateral link, each ETS agrees to accept the compliance instrument from the other ETS for compliance purposes. Such a bilateral link requires the agreement of both schemes; an example of such an agreement is that between the governments of California (US) and Quebec (Canada) under the Western Climate Initiative (WCI) framework.³³ These two jurisdictions have been active participants in the development of the WCI and of the 'roadmap' for the implementation of regional cap-and-trade programmes.³⁴ Since the California and Quebec schemes are based on this roadmap, the process of harmonization and linking has been relatively straightforward.³⁵

³² E. Haites, 'Lessons Learned from Linking Emissions Trading Systems: General Principles and Applications', Partnership for Market Readiness, Technical Note 7, Feb. 2014, pp. 6–7, available at: <https://www.thepmr.org/system/files/documents/PMR%20Technical%20Note%207.pdf>. See also M. Mehling & E. Haites, 'Mechanisms for Linking Emissions Trading Schemes' (2009) 9(2) *Climate Policy*, pp. 169–84.

³³ 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', Sept. 2013, available at: https://www.arb.ca.gov/cc/capandtrade/linkage/ca_quebec_linking_agreement_english.pdf. The Canadian province of Ontario has also announced its intention to establish a cap-and-trade programme and to join the Quebec and California scheme: Kathleen Wynne, Premier of Ontario, 'Cap and Trade System to Limit Greenhouse Gas Pollution in Ontario', News Release, 13 Apr. 2015, available at: <https://news.ontario.ca/opo/en/2015/04/cap-and-trade-system-to-limit-greenhouse-gas-pollution-in-ontario.html>.

³⁴ WCI Partners, 'Design for the WCI Regional Program', July 2010, available at: <http://www.westernclimateinitiative.org/the-wci-cap-and-trade-program/program-design>.

³⁵ The State of California made a commitment in 2006 to reduce GHG emissions and the California Air Resources Board adopted regulations to establish a cap-and-trade programme: Global Warming Solutions Act of 2006, AB 32, Nunez, ch. 488 Cal. Stat. 2006, adding Division 25.5 to the Health and Safety Code (California) and California Code of Regulations, Title 17, subch. 10, Art. 5 California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, §§ 95801–96023. The first auction of allowances took place in late 2012. Information on the cap-and-trade programme

A key feature of the linking programme is the joint operation of the Compliance Instrument Tracking System Service (CITSS), which operates as a common registry under the linking agreement. This system is used to register entities and track compliance instruments, including transfers and surrenders, under both schemes. It was designed to support linking and cross scheme transfers.³⁶ Linking started on 1 January 2014³⁷ and joint auctions have been held since November 2014.³⁸ Ontario (Canada) has recently announced its intention to also link with Quebec and California.³⁹

2.2. Bilateral Link – Separate Registries

An alternative mechanism to achieve bilateral linking allows the participating jurisdictions to maintain their respective registries so that allowances transferred from one registry to the other do not lose their identity. Such a system is likely to 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 with Australia's CPM,⁴⁰ and in 2013 they produced a linking design consultation paper (Linking Design Paper).⁴¹ The stated goals were to develop an interim one-way link from 2015 whereby EU allowances would be accepted under the CPM, with full two-way linking between the systems by 1 July 2018. Although Australia's CPM has been repealed, the work carried out on the linking mechanisms is still valuable as a model.

generally and the auctions specifically can be found on the California Air Resources Board website, available at: <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>. The Quebec cap-and-trade programme was made possible through an amendment in 2009 to the Environmental Quality Act, RSC 2014 (Quebec), c. Q-2, and regulations issued thereunder in 2011: see An Act to Amend the Environmental Quality Act and Other Legislative Provisions in Relation to Climate Change, RSQ 2009 (Quebec) and Regulation Respecting a Cap-and-Trade System for Greenhouse Gas Emission Allowances, RR 2011, c Q-2, r 46.1 (Quebec). The first compliance period for both schemes started on 1 Jan. 2013: Gouvernement du Quebec, *Regulation Respecting a Cap-and-Trade System for Greenhouse Gas Emission Allowances (C&T): Technical Overview* (Gouvernement du Quebec, 2013).

³⁶ State of California, Air Resources Board, 'Linking Readiness Report', 1 Nov. 2013, pp. 17–8, available at: https://www.arb.ca.gov/cc/capandtrade/linkage/arb_linkage_readiness_report.pdf.

³⁷ *Ibid.*, p. 3.

³⁸ Details of the joint auction results can be found at the California Air Resources Board, 'Auction and Reserve Sale Information', 2016, available at: <http://www.arb.ca.gov/cc/capandtrade/auction/auction.htm>.

³⁹ Ministry of the Environment and Climate Change, Ontario, 'Reducing Greenhouse Gas Pollution Through Cap and Trade', Press Release, 8 June 2016, available at: <https://news.ontario.ca/ene/en/2016/06/reducing-greenhouse-gas-pollution-through-cap-and-trade.html>.

⁴⁰ The (now former) Australian Minister for Climate Change and Energy Efficiency, Hon. Greg Combet MP, and the (now former) 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 Aug. 2012, available at: http://europa.eu/rapid/press-release_IP-12-916_en.htm.

⁴¹ European Commission and Australian Government, Department of Climate Change and Energy Efficiency, 'Registry Options to Facilitate Linking of Emissions Trading Systems: Consultation Paper', 2013 (Linking Design Paper), a copy of this paper is on file with the author.

As described in the Linking Design Paper, the bilateral link would involve the transfer of allowances between the ETS registries. In practice, the holder would nominate both the allowance held in an EU registry account that is to be transferred to the Australian scheme and the Australian registry account into which it should be transferred (and vice versa).⁴² The two registries would verify the transaction and the allowance would be removed from the EU registry account and included in the Australian registry account. The flow of allowances in either direction between the two registries should therefore be simple and streamlined.

The distinction between this linking mechanism and the common registry approach lies in the separate registries. Even though allowances are intangible, they will at any given time be ‘on’ a particular registry and the movement of allowances from one registry to another can trigger tax consequences. This also means that entities intending to engage in cross-border transfers and trading need to maintain registry accounts for both jurisdictions.

2.3. *Unilateral Link with Gateway*

The unilateral linking approach is a mechanism whereby one jurisdiction accepts the use of allowances from another ETS for compliance purposes such that the linking is only one way and accommodates only the inflow of allowances from that other ETS. It is possible to set up such a link unilaterally as it is not necessary for the other jurisdiction to consent to the arrangement. Under the EU ETS-CPM interim unilateral link developed in the Linking Design Paper (perhaps erroneously described in the paper as an ‘indirect link’), if an entity wished to import an EU allowance, that entity would nominate the allowance for importation and direct that it be transferred from its EU registry account to an EU registry account held by the Australian government.⁴³ Simultaneously, the Australian government would issue a replacement or ‘shadow’ allowance, known as an Australian-issued international allowance (AIIU), to the entity’s account on the Australian registry. This type of mechanism has been described as a ‘gateway’ by Sterk and Schüle,⁴⁴ and this terminology is adopted in this article. The AIIU could then be traded on the Australian carbon market and would be eligible for surrender. If an AIIU were surrendered to meet a compliance obligation under the Australian CPM, under the proposal the Australian government would direct that the corresponding EU allowance be transferred from its EU registry account to the EU Deletion Account, thereby ensuring that it could not be double-counted as a surrender.⁴⁵ An entity could also convert an AIIU back to an EU allowance, again through the Australian government EU account.⁴⁶

⁴² Ibid., pp. 23–5.

⁴³ Ibid., pp. 17–22.

⁴⁴ Sterk & Schüle, n. 15 above, p. 426

⁴⁵ Linking Design Paper, n. 41 above, p. 26.

⁴⁶ The view was taken that the swap-back was necessary to facilitate liquidity in the market and the development of derivatives markets: *ibid.*, p. 22.

3. TAXATION PRINCIPLES

This section explains the taxation of cross-border transactions involving emission allowances. The Base Case is grounded in an application of general tax principles to allowance transactions and assumes that tax treatment builds upon accounting profits. Australia developed a special tax regime for allowance transactions, which included special rules to deal with cross-border transfers. These approaches will be tested in Section 4.

3.1. Domestic Taxation

As identified in an earlier work by the author,⁴⁷ from a domestic point of view the most significant tax issues that arise under an ETS are the treatment of allowances as an asset class, the treatment of free allocations, and the recognition of liabilities under the ETS. This section explains how general domestic tax laws apply to these three issues and identifies this set of rules as the 'Base Case rules'. The Base Case is then contrasted to the special tax rules developed in Australia with respect to allowances.

The application of general tax principles: the Base Case rules

If recent experience provides a guide, the establishment of an ETS in most cases will not be accompanied by specific tax changes and, as a result, jurisdictions will rely on general tax principles already enshrined in their tax legislation to determine the consequences of ETS transactions. In many jurisdictions, the taxation of company profits relies on accounting profits as the starting point for determining taxable income.⁴⁸ However, there is currently an absence of consensus regarding the most appropriate way in which to report the effects of an ETS in financial accounts.⁴⁹ A 2013 accounting study undertaken by the author identified the accounting approaches followed in practice by a sample of high emitters subject to the EU ETS and revealed that, although there is a continued lack of consistency, a pattern of preferred treatment existed.⁵⁰ The results of this study inform the analysis here.

The characterization of an asset for tax purposes affects the treatment of gains and losses realized on the sales of such assets. The main categories are capital (non-current) assets, revenue (current) assets, and trading stock (inventory). Aside from the financial institution/trader that would hold allowances as inventory, liable entities are

⁴⁷ C. Black, 'Approaches to the Taxation Treatment of Carbon Emission Allowances and Liabilities: Comparing the United Kingdom and Australia' (2013) 3 *British Tax Review*, pp. 287–320.

⁴⁸ European Commission, 'Report on the Responses Received to the Consultation of Accounting Regulatory Committee Members on the Use of Options within the Accounting Directives', Sept. 2011, 'Responses to Question 8', available at: http://ec.europa.eu/internal_market/accounting/docs/2010-options_en.pdf.

⁴⁹ The International Accounting Standards Board commenced work on these issues in 2004 and was joined in these efforts by the US Financial Accounting Standards Board, but they have recently suspended work on the project: International Financial Reporting Standards (IFRS), 'Pollutant Pricing Mechanisms', available at <http://www.ifrs.org/Current-Projects/IASB-Projects/Emission-Trading-Schemes/Pages/Emissions-Trading-Schemes.aspx>.

⁵⁰ C. Black, 'Accounting for Carbon Emission Allowances in the European Union: In Search of Consistency' (2013) 10(2) *Accounting in Europe*, pp. 223–39.

more likely to treat allowances as current assets acquired, sold and surrendered in the ordinary course of carrying on its business activity. The cost of acquiring such an asset would not be a deductible outgoing, but the profit realized on sale would be treated as income derived while a (net) loss would be a deductible expense. This accords with the more common characterization of allowances as intangible (current) assets for accounting purposes.⁵¹ In contrast, the US Internal Revenue Service (IRS) has characterized allowances issued under the Acid Rain Program⁵² as capital assets, but the IRS has not provided any clear advice in relation to allowances issued under other schemes.⁵³ For tax purposes, most jurisdictions require a realization event (a disposal or change of ownership) to trigger the recognition of gains and losses on assets other than inventory, and this rule would apply also to allowances.

The basic tax issue in relation to free allocations is whether to treat the receipt of a free allocation as a derivation of income in kind upon receipt, or to defer the recognition of any income until the free allowances are sold. According to the 2013 accounting study mentioned above, a high percentage of entities adopt a ‘nil-basis approach’ and record free allocations at a nominal or nil value for book purposes.⁵⁴ This reflects the view that income from allocations is recognized only if or when the allowances are sold. There is evidence that this preference also has been adopted for tax purposes in the majority of jurisdictions participating in an ETS.⁵⁵ It also accords with the tax treatment adopted in the US in relation to allowances issued under its Acid Rain Program.⁵⁶ The practice has been criticized for creating a ‘lock-in’ effect, which can have a detrimental impact on the liquidity and efficiency of the allowance market, especially across time periods.⁵⁷ For the purposes of this article, a nil-basis approach is assumed. If a free allowance is surrendered to meet a compliance obligation, there will be no tax effect. If, instead, the allowance is sold, the gross proceeds will be included in income at that time.

The final important tax question regards the timing and valuation of the compliance expense. A compliance liability under an ETS is based on the measured emissions for the period, which is usually twelve months. However, the operational rules generally allow a number of months for the preparation of the emissions report

⁵¹ A total of 69.4% of the sample entities disclosed the characterization of emission allowances as intangible assets: *ibid.*, p. 231.

⁵² The Acid Rain Program was created under the Clean Air Act Amendments of 1990, 42 USC, subch. IV-A (1990) (US). The Program is operated through the US Environmental Protection Agency (EPA) and information on the program can be found on the EPA website, available at: <http://www.epa.gov/airmarkets/progsregs/arp/basic.html>.

⁵³ IRS, Revenue Procedure 92-91, 1992-2 CB 503 (July 1992); see also Y. Margalioth, ‘Tax Policy Analysis of Climate Change’ (2010–11) 64(4) *Tax Law Review*, pp. 63–98.

⁵⁴ Black, n. 50 above, p. 232. A total of 62.9% of the sample entities disclosed a nil or nominal valuation for free allocations.

⁵⁵ OECD Committee on Fiscal Affairs, ‘Tax Treaty Issues related to Emissions Permits/Credits’ (OECD, 2014), para. 14, available at: <https://www.oecd.org/tax/treaties/report-emissions-permits.pdf>. See also Näss-Schmidt et al., n. 21 above, p. 9.

⁵⁶ IRS, Revenue Ruling 92-16 (1992), ‘Issuance of Emission Allowances’. See also IRS, Private Letter Ruling 201228020 (17 Apr. 2012); IRS, Private Letter Ruling 201123003 (4 Mar. 2011).

⁵⁷ G.M. Lucas, ‘The Taxation of Emissions Allowances Distributed for Free as Part of a Carbon Cap-and-Trade Program’ (2010) 1 *George Washington Journal of Energy & Environmental Law*, pp. 16–39; Yale, n. 19 above; Kane, n. 8 above.

and the final surrender deadlines are usually some months later again. For example, under the EU ETS, the reporting date for the calendar year is 31 March and the surrender date is 30 April. Such a compliance timeline creates a mismatch between the accrual of the liability and its satisfaction. This is not unusual in itself, but the fact that the liability is denominated in a number of allowances, rather than as a cash amount, adds complexity since the value of the allowances is likely to change between the end of the financial year and the surrender date.

According to general accounting and tax principles, accruals accounting applies ordinarily to business activities such that an expense is incurred (and therefore deducted) in the year in which there is a presently existing liability.⁵⁸ In the case of an ETS, it can be argued that when a covered installation produces GHG emissions, this creates the legal liability under the ETS legislation and, therefore, the compliance liability accrues for tax purposes in the year in which the emissions are produced. Once the number of allowances that must be surrendered for the year has been determined, this liability needs to be valued. There is some disagreement in accounting circles about how the liability should be valued, but in practice entities apparently will use the carrying value of allowances on hand as a starting point and, if on-hand allowances are insufficient, use market value for the balance.⁵⁹ A consequence of using a nil cost basis for free allowances is that the emissions liability or expense will, in effect, show only the net liability – namely, the value of allowances that are needed above the free allocation for the year. The 2013 accounting study revealed this as the preferred approach⁶⁰ and the IRS has also provided guidance on this issue in relation to the Acid Rain Program, which appears to be consistent with such a net liability approach.⁶¹ In the subsequent income tax year, when the requisite allowances are surrendered, an adjustment (‘true-up’) must be available to reflect any difference between the original expense as estimated and the cost of the allowances ultimately surrendered.

The Australian approach

The tax treatment of ETS transactions was included in the Australian design process from an early stage and the government concluded that a specific statutory regime was preferable to the application of general principles.⁶² As a result, Division 420 was inserted into the tax law and it overrides the provisions of general application.⁶³

The rules of Division 420 apply to ‘registered emissions units’ (REUs), which term includes Australian allowances as well as those issued under the

⁵⁸ International Accounting Standards Board, ‘IAS 1 – Presentation of Financial Statements’, available at: <http://www.iasplus.com/en-gb/standards/ias/ias1>; and ‘IAS 37 – Provisions, Contingent Liabilities and Contingent Assets’, available at: <http://www.iasplus.com/en-gb/standards/ias/ias37>.

⁵⁹ Black, n. 50 above.

⁶⁰ *Ibid.*, p. 236.

⁶¹ IRS, Revenue Procedure 92-91, 1992-2 CB 503 (July 1992); see also Margalioth, n. 53 above.

⁶² Australian Government, ‘Carbon Pollution Reduction Scheme: Australia’s Low Pollution Future: White Paper’ (2008), Ch. 14 (White Paper).

⁶³ 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.

Kyoto Protocol⁶⁴ and other types of international allowance as declared by the government from time to time, provided such allowances are held in an Australian registry account.⁶⁵ This final requirement is very important for the linking context since, once an allowance leaves the Australian registry, it ceases to be an REU as defined and the provisions of Division 420 no longer apply. Instead, ordinary tax principles apply and the movement out of Division 420 may trigger domestic tax consequences, discussed below.

Division 420 prescribes a regime for transactions involving REUs that is based on the Australian trading stock rules, and all transactions are on revenue account. The author has analyzed Division 420 in detail elsewhere,⁶⁶ but the regime can be summarized as follows. It centres on the annual measurement of REUs held in the registry account. Any increase in the cost or market value of REUs held is included in income or any decrease may be deducted.⁶⁷ This feature gives the regime its working name: the rolling balance method.⁶⁸ In addition, costs of purchasing REUs are deductible expenses,⁶⁹ and the proceeds from the sale of an REU are included in assessable income.⁷⁰ Although the mechanisms are different, Division 420 will produce a net profit or loss figure on sale that mirrors the tax treatment of revenue assets under the Base Case.

In relation to free allocations, the default position under Division 420 is that the value of a free allocation is included in income in the year in which the allowance is first held in the registry account.⁷¹ However, this rule is subject to a significant exception referred to as the ‘no disadvantage rule’,⁷² which applies to free allocations made under the emissions-intensive, trade-exposed industry support scheme.⁷³ This allows the inclusion in income to be deferred until after the compliance deadline for the year for which the allowances were issued. In practice, this treatment produces the same tax outcome as the nil cost rule adopted under the Base Case, at least in the short term.

In relation to compliance expenses, Division 420 provides a deduction for the compliance expense only when the allowances are surrendered (which usually occurs in the year following the compliance year). Although this approach is perhaps simpler as it does not require the valuation and true-up calculations required for the Base Case, it generates a mismatch between the ETS compliance expense and the other costs of production as it defers the compliance expense.

⁶⁴ Kyoto Protocol to the UNFCCC, Kyoto (Japan), 11 Dec. 1997, in force 16 Feb. 2005, available at: http://unfccc.int/kyoto_protocol/items/2830.php.

⁶⁵ ITAA 1997, n. 63 above, s. 420-12.

⁶⁶ C. Black, ‘Considering the Taxation Implications of Australia’s Carbon Pricing Mechanism’ (2012) 41(3) *Australian Tax Review*, pp. 136–53.

⁶⁷ ITAA 1997, n. 63 above, s. 420-45.

⁶⁸ White Paper, n. 62 above, Ch. 14-5.

⁶⁹ ITAA 1997, n. 63 above, s. 420-15.

⁷⁰ *Ibid.*, s. 420-25.

⁷¹ *Ibid.*, s. 420-60.

⁷² This term was coined in the White Paper, n. 62 above, Ch. 14-14.

⁷³ The Jobs and Competitiveness Program operated under Part 7 of the now repealed Clean Energy Act 2011 (Cth).

3.2. *International Tax Principles*

It is generally accepted that the power to tax is exercised and tax is raised or charged through domestic law.⁷⁴ However, a tax treaty may override or limit the operation of domestic law. A tax treaty is itself binding on states under international law and, in a monist system, taxpayers may infer rights directly, while in a dualist system taxpayers generally acquire rights and obligations under the treaty through its incorporation into domestic law.⁷⁵ In relation to the matters considered in this article, 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 a connecting link, and one factor that is generally accepted to justify taxation is residence. An alternative basis of taxation is source-based taxation, which takes as its point of reference the economic activity giving rise to income. The joint application of these principles means that most countries assert jurisdiction to tax income derived by residents from all sources, as well as domestically sourced income derived by non-residents.⁷⁶

Domestic tax laws have developed a variety of concepts of residence and source. With respect to corporations, residence is ordinarily based on place of incorporation or, alternatively, the place of central management and control.⁷⁷ The OECD Model Article 4 builds on these concepts for treaty purposes by incorporating the meaning of resident under the relevant domestic law and providing a tie-breaker rule if the taxpayer would otherwise be a resident of both states. Source rules are decidedly more problematic and, 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 often different rules apply to different asset types within a jurisdiction.⁷⁸ In the case of emission allowances, tests relying on the place of transfer and location of the asset arguably point to the registry on which the allowance is recorded as the source. The registry would arguably be located where the server is maintained (usually within the jurisdiction operating the registry). The place of contract is flexible and easily manipulated. One response to this uncertainty at the domestic level is to legislate source rules, an approach adopted by Australia in relation to emission allowances.

It is assumed under the Base Case rules that each jurisdiction asserts jurisdiction to tax residents on income derived from all sources and to tax non-residents on domestically sourced income. Profits and losses from the sale of current business assets and capital assets will be derived only when a realization event occurs, which usually requires a change in ownership. The change in holding or use of an emission

⁷⁴ P. Harris & D. Oliver, *International Commercial Tax* (Cambridge University Press, 2010), p. 14.

⁷⁵ E.g., in Australia, tax treaties are given the force of law by the International Tax Agreements Act 1953 (Cth) 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).

⁷⁶ E.g., ITAA 1997, n. 63 above, s. 6-5; Corporation Tax Act 2009 (UK), s. 5.

⁷⁷ Harris & Oliver, n. 74 above, pp. 59–60.

⁷⁸ R.J. Vann, 'Taxing International Business Income: Hard-Boiled Wonderland and the End of the World' (2010) 2(3) *World Tax Journal*, pp. 291–346, at 298.

allowance within an enterprise, such as from the head office to another division, would not be a disposal or change in ownership and therefore is not a realization event for tax purposes.

Division 420 contains two unusual features. Recognizing that the application of source rules can result in uncertainty,⁷⁹ Division 420 includes deemed source rules whereby the proceeds of 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.⁸⁰ Division 420 also treats the movement of an emission allowance onto the Australian registry (referred to as ‘importing’) or off the Australian registry (referred to as ‘exporting’) as tax events. When an emission allowance that is held as a current business asset is imported, the enterprise is deemed to have sold the allowance for cost and repurchased it as an REU for the same amount.⁸¹ This has the effect of rolling the original cost of the allowance into the Division 420 rolling balance method. When this rule is combined with the deemed source rule, it can have the effect of treating the whole of any gain realized on the sale of an allowance as Australian sourced, even if part of the gain accrued while the allowance was held on a foreign registry.

The export rule operates in quite a different way. If an REU is exported, the allowance ceases to be an REU and the enterprise is deemed to have sold and repurchased the allowance for its market value.⁸² This has the effect of triggering a realization of any accrued gain or loss and, in conjunction with the deemed source rule, profits will be treated as Australian sourced. These two rules could be seen as an effort to maximize the potential scope of Australia’s taxation of allowance transactions that involve cross-border transfers.

When these basic principles are applied to an entity resident in one state (triggering residence-based taxation) which carries on income-producing activities in a second state (triggering source-based taxation), international economic double taxation can result. As noted by the OECD, it is widely recognized that double taxation has harmful effects on the cross-border exchange of goods, services, capital, technology and people.⁸³ Bilateral tax treaties, such as those based on the OECD Model, seek to resolve double taxation through the allocation of taxing rights and by requiring mechanisms for relief by way of credit for taxes paid, or an exemption. On the basis that parties negotiating a bilateral direct link of their ETSs are likely to have close economic ties generally, it is assumed for the purposes of this article that a tax treaty is in place between the jurisdictions. However, it is possible for a unilateral link to be created without a tax treaty being in place. This alternative is considered briefly in the hypotheticals.

The tax treaty analysis in this article is based on an application of the OECD Model Tax Treaty, but it should be noted that any particular tax treaty may differ

⁷⁹ Explanatory Memorandum to Clean Energy (Consequential Amendments) Bill 2011 (Cth), paras 2.119–2.120.

⁸⁰ ITAA 1997, n. 63 above, ss. 420-25(3) and 420-45(4).

⁸¹ *Ibid.*, s. 420-21(1).

⁸² *Ibid.*, s. 420-35.

⁸³ OECD, ‘Introduction to the OECD Model 2014’, in OECD Model, n. 31 above, para. 1.

from the Model, either because it was based on an earlier version of the Model and/or as a result of the negotiating states' treaty practices being at variance with the Model. Tax treaties involving developing countries alternatively may be based on the United Nations (UN) Model, which is broadly similar to the OECD Model but with some important variations which, in many instances, enhance source-based taxation.⁸⁴

Under the OECD Model, 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. Many complex issues arise in relation to the interpretation and application of tax treaties and this article does not attempt to comprehensively address them. The hypotheticals analyzed in Section 4 below contemplate transfers by a corporate enterprise, for which Article 7 of the OECD Model (the business profits article) is the most relevant. Article 13 (capital gains) could in some cases also be important, but the OECD has concluded that in practice the application of Articles 7 or 13 will produce the same tax outcomes,⁸⁵ and therefore this issue is not separately considered.

As expressed in Article 7(1), 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 permanent establishment (PE) (such as a branch) in the other state; in such a case the other (source or host) state also has taxing rights. So, under a treaty based on this model, even if a profit is considered to be sourced in a jurisdiction by virtue of domestic source rules, this profit is not taxable in the source country unless the enterprise operates through a PE located there. Where there is a PE, both the residence and source countries have the right to tax the profits of the enterprise that are attributable to the PE (whether they do or not, and when, are determined under domestic law). However, under Article 23, the first (residence) state must relieve any double taxation either by exemption or by providing a credit for the tax paid in the other (source) state. The effect is to give the host state priority taxing rights if there is a PE.

To manage the scope of the hypothetical analysis in this article, it is assumed that the enterprises are operating in corporate form and that business activities outside the residence jurisdiction are not carried on through a PE.⁸⁶ The alternative of having a PE in the host jurisdiction is considered only briefly in order to indicate areas of potential double taxation. The implications of Article 9 (associated enterprises) of the OECD Model – which applies if an allowance is transferred to another entity within a multinational group and allows a transfer pricing adjustment to reflect the arm's

⁸⁴ UN Department of Economic and Social Affairs, 'Model Double Taxation Convention between Developed and Developing Countries', 2011, available at: http://www.un.org/esa/ffd/documents/UN_Model_2011_Update.pdf.

⁸⁵ OECD Committee on Fiscal Affairs, n. 55 above.

⁸⁶ The question of whether a PE exists and the allocation of enterprise profits to that PE under Article 7 OECD Model are particularly complex and have been the subject of recent debate and changes in the OECD approach: OECD, '2010 Report on the Attribution of Profits to Permanent Establishments', 22 July 2010, and the associated amendments to Article 7, available at: <http://www.oecd.org/ctp/transfer-pricing/45689524.pdf>.

length profit that would have arisen between independent parties – are also outside the scope of the analysis.⁸⁷

4. HYPOTHETICAL TRADING SCENARIOS

This section takes the models of scheme linking and tests the operation of the alternative tax rules for potential differentiation in tax treatment across firms. The tax rules of the jurisdictions do not need to be identically structured in order to maintain consistency. The question is whether the profits derived in relation to the allowances are taxed in the same fashion, which requires consideration of the operation of the domestic rules with the overlay of the relevant tax treaty. Inter-firm consistency is compromised if the quantum of taxable profits of the enterprise depends on its residency, or if the interaction of two tax systems results in unrelieved double taxation or non-taxation. Consistency is also violated if the 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 Division 420 that, in combination with the Base Case rules, violate inter-firm consistency and therefore potentially impair the cost-efficiency of a linked market.

The international tax treatment of four hypothetical cross-border scenarios is analyzed. It is acknowledged that not every possible scenario is considered and these four have been identified as representative of those more likely to arise in practice. The scenarios are:

- transfer of allowances into home jurisdiction (import) and sale;
- import and surrender;
- transfer of allowances out of home jurisdiction (export) and sale; and
- receipt of free allocation, export and sale.

The three direct linking architectures described above are considered where relevant and the consequences of the tax laws are compared. In each case, it is assumed for simplicity that the price of allowances gradually increases. The Division 420 import and export rules are premised on the existence of a separate Australian registry and on the ability to transfer allowances between registries, and therefore would be triggered only under the bilateral link with separate registries arrangement.

4.1. Assumptions

For the purposes of this analysis, Alpha and Beta represent two jurisdictions that have linked their ETSs and have adopted the Base Case approach to the taxation of emission allowances. It is assumed that the domestic tax law of each state requires a

⁸⁷ OECD, 'Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations', 16 Aug. 2010, available at: http://www.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2010_tpg-2010-en.

change of ownership before profits and losses on assets are realized, and profits on assets used in carrying on business, including allowances, are subject to taxation in the hands of the enterprise as business profits rather than as capital gains. Compliance liabilities are recognized for tax (and accounting) purposes as they accrue, and allowances received by way of 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 OECD Model.

It is assumed that the hypothetical enterprises are companies resident in the jurisdictions and are carrying on business there. The enterprise resident in country Alpha is referred to as R(A) and, correspondingly, the enterprise resident in country Beta is referred to as R(B). The place of residence is referred to as the 'home jurisdiction', while another jurisdiction where business activities are carried on is referred to as the 'host jurisdiction'. In order to control the complexity of the analysis, as a starting point it is also assumed that the business activities of the company in the host jurisdiction do not constitute a PE. The alternative assumption of PE status is analyzed only where stated. An intra-enterprise 'transaction' could occur when the holding or use of the allowances changes from the PE to the head office or another PE of the enterprise. Such changes in use would not generally give rise to tax consequences but will be relevant for the attribution of profits of the enterprise to the PE.

4.2. Transfer of Allowances into Home Jurisdiction (Import) and Sale

In this scenario, allowances have been acquired overseas and are brought into the home jurisdiction by a resident entity and sold to an arm's length third party. Consequently, this scenario only engages the asset transaction rules and does not consider the surrender of allowances or free allocations.

Bilateral link – common registry

Under a bilateral common registry arrangement, an import of allowances could be seen to occur if R(A) acquires the allowances from R(B) for \$100 in year 1 and then sells the allowances to another company resident in Alpha for \$115 in year 2. Alpha would assert jurisdiction to tax the whole of the profit realized in year 2 on the basis of R(A)'s residency. Assuming R(A) does not have a PE in Beta, under the treaty Beta will not have the right to tax the profit. If R(A) does have a PE in Beta and the allowances were originally held by the PE, Beta would have a taxing right in relation to the portion of the \$15 that could be attributed to the PE, and Alpha would need to either exempt this profit or grant a tax credit for the tax paid by R(A) in Beta. If the acquisition and sale both occurred through the PE, then the whole of the profit could be attributed to the PE. If the allowances were acquired through the PE and then transferred to the head office before sale, then only part of the profit would be attributable to the PE. The details of this attribution would depend upon the domestic law and treaty practice of the jurisdictions. If the two jurisdictions determined that a

different amount of profit was attributable to the PE, double taxation could still arise under the treaty.

Bilateral link – separate registries

This variation of the bilateral linking mechanism assumes that R(A) acquires the allowances on the Beta registry for \$100 and R(A) first transfers the allowances to its account on the Alpha registry in year 1 (allowances are assumed to have a market value of \$110 at this point). In year 2, R(A) sells the allowances on the Alpha registry to a third party for \$115.

Under the Base Case, a transfer of allowances from one registry to another is not recognized as a taxing point. When the allowances are sold in year 2, a \$15 profit will be realized under the domestic tax laws of both jurisdictions. Alpha will assert residency-based taxing rights with respect to the \$15 profit, and Beta could assert source-based taxing rights in relation to the \$10 profit that accrued while the allowances were still on the Beta registry. However, under the tax treaty, and assuming that R(A) does not have a PE in Beta, the profit will only be taxable in Alpha under Article 7 of the OECD Model. If R(A) did have a PE in Beta, then Beta would have the right to tax the profit to the extent to which it is attributable to the PE (which may pick up the \$10 that accrued while the allowance was held in Beta). Alpha would need to prevent double taxation of this portion of the profit while retaining the sole right to tax the \$5 attributable to the increase in value when held in Alpha (by the head office, for instance).

Assuming that Alpha adopts Division 420, while the allowances are held on the Beta registry they would not be REUs, so R(A) would need to first characterize the allowances for tax purposes, the most likely option being current asset or inventory. When the allowances are transferred to the Alpha registry, they are transformed into REUs and the transfer triggers the Division 420 import rule. This rule effectively provides a rollover as it deems a sale of the allowances for cost (so no profit or loss is realized) and a repurchase (now as REUs) for cost (\$100).⁸⁸ From Beta's perspective, the transfer between registries is not a taxing point. When the allowances are sold for \$115 in year 2, Division 420 will produce a net profit of \$15 and deem it to be wholly sourced in Alpha. Beta would also recognize this profit realized in year 2 and could argue that at least some of that profit should be treated as sourced in Beta. If R(A) does not have a PE in Beta, under the treaty Alpha will have the exclusive right to tax the profit on the basis of R(A)'s residency. If R(A) did have a PE in Beta, under the tax treaty Beta would have the right to tax the portion of the profit attributable to the time in which the allowance is held by the PE (potentially the \$10). However, this would conflict with the operation of Alpha's domestic law which, by virtue of the import rule, deems the entire profit to accrue while the allowance is held in Alpha by the head office. If Alpha also retains this attribution for treaty purposes, this would

⁸⁸ This deemed purchase of REUs gives rise to a deduction for the purchase price and a cost to include in the rolling balance. 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.

create a conflict in taxing rights and could lead to double taxation not resolved by Article 7. If this cannot be resolved under domestic law, the enterprise may need to trigger the mutual agreement procedure of Article 25 to engage the relevant competent authorities (the revenue authorities of the two jurisdictions) to resolve this double taxation. Such case-by-case resolution would be costly, time consuming and uncertain.

Alternatively, if only Beta had adopted Division 420 rules, the export rule would be triggered on the transfer. The allowances would be deemed to have been sold for market value (\$110), producing a profit of \$10 which would be treated as sourced in Beta. This would not be recognized by Alpha as a realization event. However, if there is no PE in Beta, the treaty would override Beta's attempt to tax this accrued gain on the basis that R(A) does not have a sufficient connection with Beta for the latter to assert the right to tax. When the allowances are sold in year 2, Alpha would assert the right to tax the whole of the \$15 profit based on R(A)'s residency. At this stage, Beta's rules would recognize only the additional \$5 profit but would consider it foreign sourced. If R(A) did have a PE in Beta, Beta would have the right to tax the profit attributable to the PE in year 1 (the \$10) and, in year 2, Alpha would need to relieve any double taxation of that \$10 included in the \$15 realized profit.

A final alternative could see both Alpha and Beta adopting Division 420. The transfer from the Beta registry to the Alpha registry in year 1 would be treated as a deemed realization event in Beta (\$10 of Beta-sourced profit) and a rollover event in Alpha. In year 2, on the sale of the allowance, Alpha would recognize the full \$15 as Alpha-sourced income. This potential double taxation would be avoided under the basic assumptions since the treaty would prevent Beta from exerting its taxing right in year 1 on the basis that R(A) is resident in Alpha and does not have a PE in Beta. However, if R(A) did have a PE in Beta through which the allowances are originally held, Beta would have the right to tax the \$10 in year 1 under the treaty, but this would conflict with Alpha's assertion under its domestic law that the whole of the \$15 is attributable to the head office in year 2. This potential double taxation would again need to be resolved through the tax treaty.

In summary, the simple Base Case scenario with no PE 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 Division 420 import and export rules are effectively overridden by the treaty and would not change either the timing of the derivation of the profit or the power of the residence country to tax it. If there is a PE in Beta and this PE holds the allowances for at least part of the ownership period, the Base Case rules would allow Beta to tax that portion of the profit that is attributable to the PE and the treaty would operate to ensure that this profit is not taxed twice. However, the Division 420 import rule, with its source-deeming rule, has the potential to create double taxation that would not be resolved easily under the treaty.

Unilateral link with gateway

The scenario under this model involves R(A) transferring the allowances on the Beta registry to Alpha's regulator (in year 1 when they are valued at \$110) and the regulator

issuing replacement (shadow) allowances on the Alpha registry to R(A). These shadow allowances are then sold in year 2 for \$115. Since the surrender of the original allowances and their replacement with new allowances would be an actual disposal, it would ordinarily trigger a realization of any accrued gain or loss, in this case amounting to \$10. This would arguably be sourced in Beta since the transfer is on the Beta registry but, if there is no PE in Beta, under the treaty the profit would only be taxable in Alpha based on R(A)'s residency. As a result, R(A) would be taxable in Alpha in year 1 on \$10 and in year 2 on \$5. This early recognition of the accrued gain produces a timing disadvantage which could reduce market liquidity and efficiency. To avoid this result, it would be in Alpha's interest to consider providing a tax rollover for this step, so that any profit or loss is realized only in the event of a sale to another enterprise. If R(A) did have a PE in Beta, Beta would have the right to tax the \$10 profit (to the extent it is attributable to the PE) realized in year 1, and Alpha would be required to relieve any potential double taxation. Beta would not have any right to tax the \$5 in year 2 on the basis that it would not be attributable to the PE.

If there were no tax treaty in place between Alpha and Beta, Beta could assert the right to tax the \$10 that is sourced in Beta in year 1 (based on the location of the allowance originally on the Beta registry). Based on R(A)'s residency, Alpha could assert the right to tax the whole of the \$15 profit in year 2. Unless the domestic law of Alpha unilaterally provided relief (such as a foreign tax credit), this would result in double taxation of the \$10, which could have a negative impact on the effectiveness of the unilateral link.

4.3. *Import and Surrender*

The 'import and surrender' variation assumes that R(A) has compliance liabilities in year 1 under the ETS operating in Alpha. In year 1, R(A) acquires allowances from a party in Beta for \$100 and the allowances are surrendered in year 2 when their market value is \$115.

Bilateral link – common registry

From Alpha's perspective, the transaction is 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 allowances 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 expended will be compared with the actual cost of the allowances surrendered and a true-up adjustment will be made, if necessary. If the nominated allowances are used to meet the ETS compliance obligation, there will be no need for a tax adjustment in year 2 when R(A) surrenders. As there is no realization event,⁸⁹ Beta will not assert any taxation rights in relation to this transaction.

⁸⁹ Although there is a disposal of the allowances on surrender, which could technically be seen as a realization event for tax purposes, the value of the consideration received for the allowances is likely to be taken to be the value of the compliance liability, which would pick up the same amount and therefore not give rise to any gain or loss from the disposal.

Bilateral link – separate registries

Under this arrangement, the allowances are acquired by R(A) for \$100 on the Beta registry. Later in year 1, R(A) instructs that the allowances be transferred to its account on the Alpha registry (valued at this time at \$110). In year 2, by which time the allowances are worth \$115, the allowances are surrendered to meet the compliance obligation.

The tax treatment of this scenario under the Base Case assumptions is straightforward. R(A) purchases the allowances for \$100 and these will be included in the accounts as current assets at this value. The compliance obligation in Alpha will be recognized in year 1 as it accrues (for accounting and tax purposes) and will be valued based on allowances held, including those on the Beta registry. At some point the allowances are transferred to the Alpha registry and then nominated for surrender. The transfer between registries is not a tax event for either country. Upon surrender in year 2, 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 allowances) will be recognized in year 1 in Alpha. There is no realization event from Beta's perspective and therefore no basis for asserting taxing rights. There will be no attributable profit from this transaction and therefore the existence of a PE is not an issue.

If only Alpha had adopted Division 420, there would be no expense for the compliance obligation in year 1. The allowance import rule is triggered on the transfer to the Alpha registry: there will be a deemed sale of the allowances for cost and they will become REUs with a rollover cost of \$100. Beta would not recognize this transfer as a realization event. Under Division 420, in Alpha, at the end of year 2, the allowances are no longer included in the rolling balance (as they have been surrendered) and a deduction for the decline in the balance equal to the \$100 carrying cost is available, which corresponds with the compliance expense. Beta, again, will not recognize this. This is the same result as that under the Base Case except that the timing of the deduction is deferred until year 2.

If only Beta had adopted Australia's Division 420, R(A) would be entitled to the (accrued) compliance expense in Alpha in year 1 to the value of \$100. The transfer of the allowance and its surrender would not be tax events in Alpha. However, Beta would view the transfer out of the allowance in year 1 as an export, triggering a deemed sale for the then market value of \$110 and giving rise to a profit of \$10 that is also deemed to be Beta sourced. This result does not accord with economic reality because R(A) has not realized a profit; it has only incurred a liability. However, this scenario will not lead to double taxation if R(A) does not have a PE in Beta and, therefore, under the treaty Beta has no taxing right in relation to this profit. If R(A) did have a PE in Beta, Beta would have a taxing right in relation to the \$10 and this could potentially lead to unrelieved taxation as Alpha may only grant an expense deduction for the real cost of the allowances, namely \$100.

Unilateral link with gateway

In this scenario, R(A) sets up an account on the Beta registry and acquires the allowances for \$100. Later in year 1, when the allowances have risen in value to

\$110, R(A) transfers the allowances to the Alpha regulator's account on the Beta registry and the Alpha regulator issues new shadow allowances to R(A) on the Alpha registry. In year 2, R(A) nominates these allowances for surrender.

On the assumption that R(A) does not have a PE in Beta, it is only the application of Alpha's domestic rules that needs to be considered based on R(A)'s residency. If a rollover has not been provided, R(A) would recognize a \$10 profit when the allowances are transformed, based on the consideration equal to the value of the shadow units acquired (\$110) less the cost of \$100. The compliance expense available in year 1 will reflect the cost of the allowances then on the Alpha registry – namely, \$110. The net deduction of \$100 (\$110 expense and \$10 profit) would reflect the economic cost to R(A). On surrender in year 2, there are no further consequences. These outcomes match those under the other linking architectures. If R(A) did have a PE in Beta, Beta could assert the right to tax the \$10 derived when the allowances are converted in year 1 and Alpha would need to provide a credit or exemption for this profit. Alpha would need to allow a compliance expense of \$110 if R(A)'s net tax position were to reflect the true cost of \$100.

If no tax treaty were in place, Beta could argue that the gain realized when the allowances are converted is sourced in Beta, given that the original allowances were 'located' on the Beta registry. This could be a basis for taxation in Beta regardless of the existence of a PE. From Alpha's perspective, the \$10 profit on conversion plus the \$110 compliance expense would produce a net compliance cost of \$100 to R(A). However, the taxation by Beta of the \$10 profit realized on conversion but not realized in reality by R(A) would be unresolved and would interfere with the functioning of this mechanism.

4.4. Transfer of Allowances out of Home Jurisdiction (Export) and Sale

This scenario assumes that the allowances are acquired by R(A) in Alpha for \$100 in year 1, are 'exported' from the home country to Beta when valued at \$110, and sold in year 2 for \$115. As this scenario only involves exporting allowances, the unilateral link architecture (which allows only in-flows) is not considered.

Bilateral link – common registry

Under a common registry arrangement, this scenario contemplates a sale by R(A) to R(B). Although no transfer to another registry occurs, the transfer of ownership and use of the allowances could be seen as effectively an export from Alpha to Beta. Under the Base Case, Alpha would assert jurisdiction to tax the profit of \$15 realized in year 2 on the basis of R(A)'s residency. If R(A) had a PE in Beta, Beta would only have a right to tax some of this profit if the use of the allowances were transferred to the PE prior to the sale to the third party, and Alpha would be required to provide an exemption or credit. If both jurisdictions attributed the same amount of profit to the PE, no double taxation would arise.

Bilateral link – separate registries

If separate registries are maintained, this transaction assumes that R(A) acquires the allowances on the Alpha registry and transfers them to its account on the Beta registry

for sale. Starting with the Base Case, the transfer is not a change of ownership and therefore is not a taxing point in either Alpha or Beta. When the allowances are sold on the Beta registry, the enterprise would realize a \$15 profit, which would be recognized by both jurisdictions in year 2. Beta's domestic law could treat the profit as sourced in Beta since the sale occurred on the registry there. Under the tax treaty, Beta's right to tax depends upon whether R(A)'s activities in Beta constitute a PE and the extent to which the profit is attributable to the PE. If it is assumed that R(A) does not have a PE in Beta, Alpha retains sole taxing rights under the tax treaty based on R(A)'s residency. If R(A) does have a PE in Beta, Beta has the right to tax the portion of the profit attributable to the PE (for example, \$10), and Alpha needs to relieve any double taxation of this portion (retaining the right to tax the balance of \$5).

If it is assumed that Alpha has adopted the Division 420 approach, the transfer of allowances by R(A) from the Alpha registry to the Beta registry would be classified as an 'export' of REUs, triggering a deemed sale and repurchase for market value in year 1. The profit realized at this point (\$10) is taxable to the enterprise in Alpha on the basis of R(A)'s residency. Once the allowances are no longer on the Alpha registry, they cease to be REUs and the provisions of Division 420 no longer apply. The allowances need to be reclassified under Alpha's domestic law and it is assumed that they would be seen as revenue assets. The allowance export rule deems a market value cost basis (of \$110) to R(A) for these purposes. On sale for \$115 in year 2, an additional \$5 profit will be realized from Alpha's perspective, derived by R(A). From Beta's perspective, the whole of the profit of \$15 will be realized on the sale in year 2. Beta could argue that at least \$5 of 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 be taxable only 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. If R(A) does have a PE in Beta, Beta can assert the right to tax \$5 in year 2, and Alpha must exempt this profit or grant a foreign tax credit.

If Beta adopted Division 420, the transfer of the allowances to the Beta registry would be treated as an import from Beta's perspective and the cost of the allowances as REUs would be the original \$100 cost. On disposal in year 2, Beta's domestic law would recognize the \$15 profit as wholly Beta sourced but, under the tax treaty, Beta would not be entitled to assert the right to tax this profit given the residency of R(A) without a PE. Rather, the profit would be taxable in Alpha on realization in year 2. If R(A) did have a PE in Beta, double taxation might arise as Beta could argue that, under its domestic law, all of the \$15 is attributable to the PE (based on the import rule). Alpha could assert that only \$5 is attributable to the PE and limit the exemption or credit to that amount only.

In summary, the timing of the derivation of the profits from the holding of the allowances will differ depending on the operation of the domestic law in relation to the export transaction. Under Division 420, 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 tax until year 2. Potential double taxation

arises where Beta has adopted Division 420 and the allowances are transferred to a PE in Beta before the sale.

4.5. *Receipt of Free Allocation, Export and Sale*

This scenario analyzes the consequences of trading in allowances that were freely allocated. It is assumed that the recipient of the free allocation is a company resident in the state in which the industrial activities that have given rise to the entitlement are undertaken. The Base Case rules assume that a free allocation of allowances is not an income derivation event and a nil cost is appropriate for these assets. As this scenario only involves exporting allowances, the unilateral link architecture is not considered.

Bilateral link – common registry

In this scenario, R(A) receives a free allocation in year 1 that is in excess of what R(A) needs to meet its compliance obligation. Rather than bank the allowances, R(A) decides to sell them in year 2. The common registry would allow R(A) to sell the allowances directly to the third party in Beta. Given the Base Case assumption of a nil cost base, the proceeds of \$115 (as profits) would be realized on disposal and would be taxed in full in Alpha based on R(A)'s residency. It is unlikely that Beta would seek to tax any of this profit unless R(A) has a PE in Beta and the holding of the allowances is transferred from the head office to the PE prior to the sale. As in the scenarios above, if the PE profit attribution rules of both jurisdictions operate to allocate the same amount of profit to the PE, no double taxation should arise.

Bilateral link – separate registries

It is assumed that R(A) directs that the allowances (with an assumed value of \$100 when granted) are transferred to its account on the Beta registry in year 1 (by then valued at \$110). The allowances are sold for \$115 via the Beta registry in year 2. The transfer between registries is not a taxable event under the Base Case assumptions. The taxable event is the disposal, when the value is realized. 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, the profit will only be taxable by Alpha in year 2, even though some of the profit could be seen as Beta sourced. If R(A) did have a PE in Beta, Beta would have the right to tax that portion of the profit attributable to the PE, but this is likely to be limited to the increase in the value of the allowances when held on the Beta registry (only \$5 out of the total proceeds/profit of \$115). Under the treaty, Alpha would treat this amount as exempt or grant a credit for the tax paid.

If Alpha has adopted Division 420, the free allocation triggers the no disadvantage rule and the initial value of the allowances will be nil for the purposes of the rolling balance (in effect not included in income). When R(A) transfers the allowances to the Beta registry, the export rule is triggered and the market value of the allowances (\$110) is included in the income of R(A) and taxed in full in Alpha on the basis of residence. As this rule effectively includes unrealized profits in income, it exacerbates

the lock-in effect, given the resulting disincentive to transfer the allowances. When the allowances are sold on the Beta registry in year 2, Alpha's ordinary rules will then operate but, by virtue of the export rule, the cost of the allowances will escalate to \$110, so that only an additional \$5 profit is assessable in year 2. From Beta's perspective, only the sale in year 2 producing the profit of \$115 would be recognized. Although Beta could argue that at least part of this profit (\$5) is Beta sourced, without a PE, Beta will not have the right to tax any of the profit.

Another variation involves a free allocation to R(A) in Alpha, with the Base Case rules in place, followed by a transfer to the Beta registry and a sale, under the assumption that Beta has Division 420 rules in place. The free allocation is not an income derivation event under the Alpha rules and there is no relevant connection with Beta at this point. When the allowances are transferred to the Beta registry, from Beta's perspective the Division 420 import rule is triggered, the allowances become REUs, and the REUs are deemed to have been acquired for cost, which in this case is nil. When sold in year 2, the proceeds of \$115 are realized as income by both Alpha and Beta. If R(A) does not have a PE in Beta, the profit will only be taxable by Alpha based on R(A)'s residence. However, if there is a PE in Beta, Beta could argue that it has a right to tax the portion of the profit attributable to the PE which, under the Division 420 import rule, is the whole of the profit. If this attribution is accepted for treaty purposes, this could lead to double taxation, which may not be resolved under Article 7.

5. CONCLUSIONS

Evaluations of emissions trading taxation in the law and economics literature to date – offered most notably and recently in the work of Costantini and co-authors⁹⁰ – suggest that differentiated tax treatment of cross-border emissions trading potentially has a significant impact on the carbon market. This article contributes to this literature by providing a detailed legal doctrinal analysis of the interaction of direct (income) tax systems under linked ETSS, specifically by examining the tax outcomes of applying a set of Base Case rules and comparing them with the outcomes when rules based on the special regime developed by Australia are adopted. Inter-firm consistency will be violated when a firm is subject to unrelieved double taxation or if tax timing differences occur, depending upon the jurisdiction.

The analysis of the carbon trading scenarios in which both jurisdictions adopt the Base Case rules does not produce differentiated tax outcomes on the basis that the relevant tax treaty would resolve any double taxation arising from the two jurisdictions claiming a right to tax on a residence and source basis respectively. If the enterprise has a PE in the host jurisdiction, double taxation is avoided by way of Article 7 on the assumption that both jurisdictions apply the PE profit attribution rules in the same way. The addition of Division 420 rules, however, does create difficulties, largely in relation to timing differences where Division 420 has the potential to deem realization events at an earlier time than would otherwise arise.

⁹⁰ Costantini et al., n. 16 above.

Such timing issues are not resolved by the treaty and are most marked in the case where a free allocation is exported and then sold. In those cases not involving a PE, the effect of the Division 420 deemed source rule appears to be overridden by operation of the treaty, which calls into question the relevance of this rule. In addition, the Division 420 rule that deems a disposal on export is arguably unnecessary when the allowance holder is a resident as any ultimate profit would be assessable by the home country on the basis of residence. If the allowance holder is not a resident, the deemed source rule has no substantive effect given that the home jurisdiction would assert the sole right to tax in any event. However, the addition of a PE under the Division 420 rules produces potential double taxation, which is not immediately resolvable by Article 7 of the OECD Model and could therefore have a significant impact on linking, especially with respect to the export of freely allocated allowances.

Evidently, the conclusions borne out by the analysis pertain only to the extent that the assumptions made to control the scope of the investigation apply. Most obviously, it has been assumed throughout that the enterprises in question are liable entities and the treatment of carbon traders is not addressed. This assumption is in line with the literature on this topic to date.⁹¹ The alternative of a party to the transaction having a PE has only been explored briefly, again to control scope, as PE profit attribution rules under tax treaties and domestic law are very complex and a thorough analysis of these issues requires a separate study. By the same token, the alternative of there being no tax treaty in place is mostly left out of the scope of the analysis.

A general observation that can be drawn from the hypotheticals is that the effect of the Division 420 import and export rules is largely overridden when a tax treaty exists between the jurisdictions and that, assuming there is no PE, the treaty resolves any potential double tax problems. Given that it is unlikely that a linking arrangement would be agreed between jurisdictions that are not tax treaty partners, the existence of Division 420 rules may not be justified. In addition, the timing disadvantage created by the export rule, which is especially pronounced in relation to free allocations and is not resolved by treaty, potentially interferes with the functioning of the market and also seems unnecessary once the treaty is applied. The potential for unresolved double taxation when Division 420 is combined with the existence of a PE is particularly problematic. Finally, the added complexity of the Division 420 rules also weighs against their adoption.

Based on this analysis, it is difficult to recommend the approach taken by Australia in Division 420. It is suggested that if tax certainty is desirable, then a codification of an accounting-based approach (like the Base Case rules) would be a preferable course

⁹¹ For example, in the analytical model developed by Costantini et al. and described in their paper, firms take the permit endowment and taxation as given and then choose their level of emissions and trading activities, so this thereby limits the model to market participants that have emission obligations: Costantini et al., n. 16 above, p. 609. Similarly, two of the four key questions considered in the Copenhagen Economics report – (i) whether firms should be allowed to deduct the purchase costs for allowances when purchased or when they are used for compliance, and (ii) how free allowances should be taxed – and the accompanying analysis in the report evidence that the tax considerations are being viewed from the perspective of liable entities: Næss-Schmidt et al., n. 21 above, pp. 6–7.

as this would promote the predictability of domestic tax outcomes and would seemingly avoid double taxation where a tax treaty is in place between the linking partners. At a minimum, as part of a work plan to evaluate potential linking arrangements, it is suggested that modelling of tax outcomes be undertaken. This could test for any inconsistencies in tax consequences under the specific features of the tax legislation of the linking partners and the proposed linking mechanism. If significant impacts are identified, rather than being seen as a barrier to linking, this would signal a need to reform the tax regime to support the linking mechanism.

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