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On the effectiveness of carbon-motivated border tax adjustments

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Introduction

As governments consider commitments to reduce carbon emissions, an accompanying question is what adjustments are appropriate to counteract any competitive disadvantage to domestic producers resulting from such commitments, particularly in the European Union, the United States and other Organisation for Economic Co-operation and Development countries.[1]

Considering the widely diverging levels of commitments in the area of carbon reductions, many specialists consider that some form of remedy is reasonable in order to maintain the competitiveness of domestic industries. Current thinking in global environmental policy circles is that border tax adjustments (BTAs) could be one solution, and may be included in an agreement that might emerge from Copenhagen in 2009 as part of the post-Kyoto world/United Nations Framework Convention on Climate Change post-Bali process (see also Walsh and Whalley, 2008).

This text is based on more extensive research[2] and focuses only on the issue of effectiveness of BTAs in relation to policies on carbon emission reductions. This debate carries important lessons for developed as well as developing countries in the Asia-Pacific region.

A. Background to current proposals

The issue of carbon motivated BTAs has surfaced during the past two years as part of a general discussion of leakage on the effects of country or regional carbon commitments. Most of the debate has centred on the WTO compatibility of such measures (De Cendra, 2006;, Demaret and Stewardson, 1994; Goh, 2004; and Ismer and Neuhoff, 2007)). Relatively little of the debate has focused on what the impacts of these border adjustments would actually be, although Ismer and Neuhoff (2007) provided an initial partial equilibrium analysis of impacts.

The background to this growing debate is that in a world where different entities move at different speeds in undertaking carbon emission reductions, and do so from different initial standing points, the result will be unequal carbon prices across various countries. In the context of the European Union emissions trading scheme, the

[1] Currently in the European Union, commitments exist that have been made by the European Commission for a 20 per cent reduction in emissions by 2020 and a 20 per cent target for use of renewables, with emissions reductions to go to 30 per cent if other regions match (see Ismer and Neuhoff, 2007). These emission reductions are seen in the European Union as going farther than in any other entity globally; hence, a system of border adjustments involving tariffs on imports and export subsidies is seen as a way of offsetting the competitiveness effects that are involved. The European Union programmes appear likely to be implemented in ways that are highly sectorally focused, with major emphasis on power generation, aluminium, cement and steel. In the United States, discussion of similar potential legislation is ongoing, even though the United States has undertaken no formal commitments at this stage. Proposals along these lines are contained in the Lieberman-Warner Bill (see Brewer, 2008), which by 2019 would mandate similar United States actions.

[2] B. Lockwood and J. Whalley, 2008.

competitiveness and leakage effects of unilateral climate changes have thus been a major topic of discussion (see Dröge and Kemfert, 2005).

The leakage discussion focuses on how one country may reduce emissions and other countries may increase emissions as a result of a shift in consumption from domestically produced carbon-based goods towards now cheaper importable substitutes, allowing for more carbon-intensive production in regions without comparable carbon pricing. The claim is that along with these effects there are competitive disadvantages to domestic industry associated with leakage, and that these adverse competitiveness effects become critical in securing agreement to the emissions reductions.

The need to offset these losses of competitiveness has been portrayed as a way of remedying leakage, although in reality they become tax-induced offsets for cost increases faced by domestic producers. Although not explicitly discussed as part of the BTA effort, commitments to achieve targets for the use of renewable sources of energy (wind and solar) could also involve BTAs due to similar effects. It should be noted that BTAs are only one possible instrument for offsetting these effects. Alternative instruments include changing corporate tax rates by sector, research and development tax credits, depreciation rates and many other tax-related measures.

This set of arguments has so far been made mostly in the European Union where an emissions trading scheme operates. However, it also appears likely to follow in Australia and New Zealand as well as in some regions and provinces within the United States and Canada where emissions reduction policies are either in place or under discussion.[3] Since the strategic sectors for leading the emission reduction strategy have been identified in the European Union, certainty of the time profile of carbon pricing for long-term investments is also needed. This is seen as a prime motivator for adjustments at the border that preserve international competitiveness. These sectors include cement, iron and steel, aluminium, pulp and paper, refineries and fertilizer.

Types of border tax adjustments: Import taxes and tax equivalents

There are two ways that have been advanced to offset the leakage and cost effects involved. One is that imported goods would be taxed at the border in ways that reflect the cost of the emissions trading, were they to be produced in the home market they are entering. This would involve BTAs between countries, and the central debating point has been WTO compatibility with such measures. There are, however, no clear definitions or calculations as to the relevant United States dollar or euro amounts that are to be used in such adjustments, or even how such calculations would be made. One of the difficulties is that border adjustments used to offset cost disadvantages imposed on domestic producers would reflect added production costs not only occurring directly but also indirectly (e.g., emissions involved in the production of the steel that goes into

[3] Although EU emissions policy is seen in this way in Europe, in many ways the unilateral commitments undertaken by China out to 2020 go beyond those in Europe (See Tian & Whalley (2008)).

a car as well as the carbon emitted assembling the car). Also, the chain of component inputs would itself need to be followed across (potentially many) borders. Another complication is that such calculations should presumably be relative to costs abroad and not just based on home markets. There would thus be gradations of adjustments across supplying countries, together with potentially complex rules of origin as now occur in preferential trade agreements.

A suggested alternative approach to BTAs is to use tax equivalents based on enforcement of emissions allowance trading for all importers. Under this approach, any importer of products would need to buy emission rights domestically to meet required offsets, and exporters could sell some of their emission permits acquired for production to gain offset. Also at issue here is the much wider question of whether or not emission reduction commitments should be focused on emissions implied by geographical location of production, or geographical location of consumption. These are also issues for the post-Bali negotiations scheduled to be concluded in Copenhagen in 2009. China's negotiators, for example, have raised the key issue of carbon emissions embedded in exports; arguing that around 35 per cent of China's emissions result from production of exports.

This emissions allowance approach to BTAs is currently being taken in the United States in two different Bills before the Senate that introduce the concept of international reserve allowances to be issued by the United States Government (See Brewer, 2008). Under that scheme, importers would need to buy emission rights for the carbon content of their imports even though their imports are produced abroad. The rationale is that this will reduce leakage effects by adjusting the prices of imports to reduce substitution from abroad. Also, exporters will be able to sell some of their emission rights acquired for production. The effect is similar to the BTA above; in both cases, there is a border adjustment and the border adjustment will form part of trade policy.

B. Impacts of border tax adjustments

Current debate on carbon-motivated BTAs, either using international reserve allowances or formal border adjustments, has thus far not built on previous debate and pre-existing literature on BTAs. Earlier border tax adjustment discussion goes back to the formation of the European Union and the commitment in the Treaty of Rome to sequenced integration. Under the Treaty of Rome there was to be first a customs union for the elimination of tariffs on trade between member countries and the adoption of a common external tariff, to be followed by a tax union in which there would be harmonization of both tax structure and rates, and eventual full economic and monetary union (see Dosser, 1967, and Shibata, 1967).

The tax union process as it evolved in the European Union in the late 1950s initially focused on indirect taxes and discussion of the adoption of a common harmonization instrument. The first tax chosen was the value-added tax (VAT), which in turn was to replace all pre-existing turnover or indirect taxes in all European Union

countries. The idea was eventually for there to be first base harmonization and then rate harmonization, which has not yet occurred.

With the adoption of VAT, however, there also arose the issue of the agreed basis for the commonly adopted tax. Was the tax to be based on production or consumption? If based on production, the tax would apply to exports, with no rebate at the border and imports would enter European Union countries tax-free – the so-called origin basis for VAT. With the use of a consumption tax basis, taxes would be applied to imports as they entered each of the European Union countries and taxes would also be rebated on exports – the so called destination basis for VAT.

However, there was also growing opinion in the United States business community that this harmonized tax structure in the European Union involved intervention in trade, which was disadvantageous to the United States. In the United States, there was – and still is – no federal broadly-based indirect or sales tax, as the United States tax system is characterized by heavier reliance on state corporate and income taxes. The argument was that United States exports had to cross a tax barrier in order to penetrate European Union markets, since taxes were applied to imports coming into the European Union while European Union exports left the European Union tax-free.

As a result, in the mid-1960s, and after the conclusion of the Kennedy Round under the General Agreement on Tariffs and Trade (GATT) in 1967 (but before the launch of the Tokyo Round in 1973), pressure built in the United States for a BTA negotiation to be included in the then-emerging trade round in GATT. There was substantial debate about GATT compatibility of such measures. GATT Article III clearly rules out the use of tax measures that give advantage to domestic products; there was debate as to whether or not the use of the destination basis in the European Union VAT was a violation of Article III. There was growing pressure on the United States Government to initiate a dispute settlement case focused specifically on alleged Article III violations.

However, no GATT negotiation took place on this issue in the Tokyo Round. This was, in large part, because of contributions from the academic community stressing that, in a very simple world where all consumption goods are taxed at the same rate, and there is no savings and no labour-leisure choice, a movement between an origin and a destination basis in a VAT or sales tax will have no real effects on trade, production or consumption (Dosser, 1967; Krauss and Johnson, 1972; and Shibata, 1967). This was despite the appearance of there being a tax barrier to imports in the importing country and a tax subsidy to exports under a destination basis compared to an origin basis.

The reason is that assuming the taxes involved are broadly based and a single rate is used (and, for now, either a sales or value-added tax), either way they are administered, there will be no effects on the slope of the budget constraint faced by consumers or on the relative prices of goods faced by the firms that produce them.

Therefore, a move from one basis to another would be neutral in terms of its impacts on trade, production or consumption. If a change between tax bases occurred (origin to destination or vice versa) something would adjust so that no changes result in relative prices across country goods. This could be an adjustment in the two country price levels, wage rates and/ or exchange rates. In this sense, neutrality (no real effects) of trade production or consumption effects would prevail under a tax basis change (see also Grossman, 1980; Whalley, 1979; and Lockwood, Meza and Myles; 1994).

This analysis of the impacts of BTAs appears to have been lost in the current debate on carbon-motivated BTAs. The implication, however, is that if carbon-motivated BTAs occur that are common across all products, then independently of the motivation for the border adjustment they will have no real effects on trade and, more importantly, offer no protection to domestic producers. Furthermore, such tax adjustment will do nothing to offset the leakage issues that, in the European case, ostensibly motivate them. This note thus argues that on the basis of earlier literature, the motivation for the BTAs has to be separated from an assessment of the actual impacts that they will have.

However, if the BTAs are sector-specific, as seems likely in the carbon case, it can be argued that the relative price effect is the dominant component of the overall BTA impact. Whether or not such BTAs will have significant effects on trade depends on the implicit model used for evaluation of the counter-factual case following the introduction of a BTA. Models could be developed in which there are sector-specific forms of labour and where the sector-specific wage rates would be the adjusting mechanism in response to a BTA re-establishing neutrality, even in sectorally differentiated BTAs. Thus, again, there seemingly need be no real side effects, even from sector-specific BTAs.

C. Conclusion

The evolving debate on import taxes is but a part of the wider discussion of new climate change programmes that, even in the European Union and the United States, still need clarification in terms of practical implementation. There is much discussion of the need to offset the competitive disadvantages that are associated with commitments on carbon emission reductions of the type currently proposed in the European Union and possibly eventually in the United States; legislation is pending on these matters in both cases.

However, there must be recognition of the existing literature that stresses the potential neutrality of such tax measures, and seemingly separates the price level and relative price effects involved in assessing the impacts of BTAs. In addition, the motivation for the use of such tax measures must be separated from an assessment of their actual impact. Their potential price level effects could have little or no impacts on trade flows, and could even offer no offset to either leakage or competitive disadvantage from cost impacts of emission commitments on domestic producers.

Hence, what may appear to be an offset to competitiveness effects of environmental policies may not, in fact, have that effect. Indeed, the apparent relative price effects themselves may not even have an impact on trading patterns if there is sufficient specificity in the production technology. If there are rents involved, either with sector-specific wage rates or through specific factors that would absorb the effects of the tax change again, there would again be no effect on trade. Finally, BTAs are not the only instrument available for the chosen objectives; corporate tax manipulation of rates and structure is another option.

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