Chapter 1

The effects of preferential trading arrangements (PTA) on excluded countries: Welfare not quantities

This chapter briefly introduces the conceptual framework we use for thinking about the effects of preferential trading arrangements (PTAs) on excluded countries. It is much more explicit than most treatments about what really determines economic welfare – prices, incomes and profits, rather than just economic activity (production and sales) *per se*[8]. It does not suggest the irrelevance of the traditional calculations of the effect of FTAs on excluded countries' welfare, but certainly advocates supplementing them.

The vast majority of the literature on PTAs emphasises the positive and negative effects emanating from 'trade creation' and 'trade diversion', respectively. In the event that the former outweighs the latter, the PTA is deemed to be beneficial. This is a far from perfect metric even for the partners, but its robust common sense and easy application have made it very popular and almost certainly not seriously misleading. But while it may be appropriate for countries inside the PTA, it is inappropriate for the countries that are excluded from it. For such countries trade creation is largely irrelevant, while trade diversion *may or may not* represent a loss.

The price effects of a PTA

The most common argument about the way in which a PTA hurts an excluded country is through trade diversion strictly curtailing its exports to the PTA relative to the position that would have been observed in the absence of the PTA. However, if the price of the lost exports equalled their marginal cost of production and sale (including normal profit) and the loss of exports is not very large, then, apart from costs of adjustment as resources move from one activity to another, the excluded country does not suffer any first-order welfare loss. The resources released are just as valuable as selling the export and buying an import instead. If, on the other hand, export prices exceed marginal costs, then for each unit of exports lost, real income falls by the difference between the value of exports in terms of imports bought and the value of the resources foregoing them they release into the domestic economy.

One way in which export prices may exceed marginal cost is if exporting generates supernormal profits because export markets are imperfectly competitive. Such profits are then lost on any trade that is diverted and cannot be replaced by alternative sales at the same price. Similar is the case with industries having economies of scale. If the creation of a

PTA causes industry in the rest of the world to lose scale economies, then the cost of all its output increases, imposing costs on its other customers and reducing its profit margins. Haaland and Norman (1992), for instance, predicted EFTA losses from the creation of the Single Market in the EU from exporting, but the evidence for these is generally rather weak despite the frequency with which they are referred to.

Another important source of difference between export values and marginal costs is export taxes. If a PTA cuts an excluded country's exports, the released resources cover the cost of production, but not the tax, and aggregate income falls. Related to this – and potentially more important practically – is the so-called Lerner symmetry theorem, which states that export taxes are equivalent to import taxes. This suggests that a country that taxes imports – has tariffs – can lose from its neighbours' PTAs. The story is as follows: tariffs reduce the level of imports below the optimal level and mean that a unit of imports is valued by consumers at more than it costs the *country as a whole.* Consumers value it at $(p + t)$ – the price plus the tariff – we know this because that is what they are willing to pay for it – but it costs the country only p, the tax just being recycled by government to consumers in their role as taxpayers. If for extraneous reasons, like a PTA, exports fall, imports must eventually follow. Since these imports are worth more than they cost, welfare is lost as they fall.

The second way in which a loss of exports can affect an excluded country is via the prices at which exporters can sell their products. This depends partly on the size of the PTA in question, or more specifically on the importance of the trade flow on which a preference is granted. While small PTAs will rarely matter as they generally will not affect the prices at which trade occurs, large agreements like the EU or the FTAA are large enough to affect world prices. Their behaviour has implications for everyone in the market – positive for buyers if prices fall and negative for sellers – whether or not they deal with the PTA itself. The significance of price changes is that they affect not just marginal trade, but the whole volume of existing trade.

If markets are segmented so that prices for identical goods vary between them, even small PTAs may affect the pricing behaviour of suppliers to the preferred market. When a member-country firm benefits from a preferential tariff concession it becomes more competitive in the PTA market, and excluded country firms may have to respond by reducing their prices in compensation. This is a simple terms of trade change for the exporter – it now gets less for every unit that it sells in that market – and we could measure the loss as x^*dp, where x is the volume of exports and dp the induced change in price. Exporters may be able to avoid some of the loss by redirecting exports to other markets or switching resources to producing other goods, but, unless these are easily achieved and generate the same revenue as the lost exports, there will be a loss. These effects are likely to be larger if markets are not only segmented, but goods are differentiated by place of production and/or place of sale so that each trade is strictly-speaking unique. If the trade flows affected by this are relatively large, the PTA could lead to appreciable loss of welfare for the excluded countries. For instance, Gupta and Schiff (1997) provided evidence of such 'large market' effects even for small countries in sales of live cattle in South America.

Looking at the large country case, Robert Mundell (1964) elucidated the terms of trade effects of a PTA in a three-country general-equilibrium model with goods being gross substitutes and price changes occurring to restore balance of payments equilibrium in response to an initial preferential tariff shock. He showed that for a single preferential tariff change by one member, the preferred exporting partner's terms of trade improved, while those of the excluded country deteriorated. Since a PTA amounts essentially to the two partners swapping such concessions, the excluded country potentially loses at every turn.

Despite the importance of price effects like this in the theoretical literature on trade policy, not much empirical work was done on the terms of trade effects of PTA until the last decade. Winters (1997b) could not locate a single empirical *ex-post* study of the price effects of a PTA. This stream of work started with Winters and Chang (2000), which examined the price effects of Spanish accession to the EC in 1986 on the exports of major excluded OECD countries. This work established beyond doubt that, as Spain offered preferential access to European Community suppliers, US pre-tariff export prices to Spain fell relative to those of the latter, but it recognised that it had not unambiguously proven that this reflected falling US prices rather than rising EC ones. For a variety of reasons, however, there seemed most likely to be at least an element of falling US prices, so the authors felt able to suggest that the PTA had had adverse effects on the excluded countries: 'reducing the pre-tariff price of US exports relative to that of member country exports by nearly half of any tariff differential'.

A more thorough exercise was conducted by Chang and Winters (2002), which examined the creation of MERCOSUR. They postulated that excluded countries' firms' export prices to Brazil would be influenced not only by the tariffs that they faced, but also by the tariffs that their rivals in member countries faced, via the effect of the latter on the rivals' prices. Thus, in the case of MERCOSUR, excluded countries suffered a decline in their terms of trade as they reduced prices in reaction to the improved market access that their preferred rival competitors received within the integrating market. In this study, Chang and Winters were able to look at US export prices to Brazil relative to US export prices to other markets, as well as relative to those of Argentinian exports to Brazil. The comparisons between different US export markets made it clear that US firms had discounted sales to Brazil, with an estimated loss of $600 million per annum in the terms of trade.

Romalis (2007) and Razzaque (2008) both investigate the terms of trade effects of NAFTA. Razzaque uses a similar approach to Chang and Winters' and finds similar results for Bangladesh/Mexico price differentials. Romalis uses quite a different method, and finds that although terms of trade effects are evident, they are smaller than Chang and Winters'. He speculates that this is because the USA was already a highly competitive market so that margins could not be squeezed much further. Romalis also finds plenty of cases where imports from excluded countries disappeared, arguably an extreme form of terms of trade effect.

One of the recurring arguments about the effects of PTAs on excluded countries concerns the so-called Kemp-Wan theorem – one of the most elegant pieces of economic theory

ever. Kemp and Wan (1976) showed in a mere three pages that a customs union (a PTA in which all tariffs between members are zero and all members charge the same tariff to excluded countries) could be designed to have no impact on excluded countries while still being welfare-improving for members! They showed that the customs union could set a common external tariff that would keep net imports of every good from the rest of the world unchanged, thus assuring that it had no impact at all on the welfare of the rest of the world. Panagariya and Krishna (2002) extended the Kemp-Wan theorem to free trade areas (FTAs) and noted that in this case, member-specific tariff vectors implied that the domestic-price vectors differed across member countries, which in turn, implied that in an FTA (as opposed to a CU) marginal rates of substitution generally failed to equalise across union members. However, they showed that if member countries within the FTA individually imported the same vector of quantities from the rest of the world in the post-FTA equilibrium as in the pre-FTA equilibrium, then the FTA could also be designed to be neutral for the rest of the world and welfare-improving for members. The important point about Kemp and Wan's insight were, first, that it did not define what would be good or bad for excluded countries, merely how to render them indifferent to a CU or FTA. Second, Kemp and Wan proved that one could conceive a PTA that did not affect excluded countries, not how to construct it.

Many markets

The discussion so far is based on partial equilibrium models which consider a single market in isolation, but of course PTAs typically concern a whole range of goods. The basic impacts by market are just as we have described them, but if a PTA has a significant effect on many markets it seems likely to affect the aggregate balances of the economy such as the demand for labour and capital and the need to keep the balance of trade at its initial level. Once these aggregate constraints are recognised – e.g. wages rise because the PTA creates excess demand for labour at the initial wage – there will be feedbacks onto each and every one of the individual commodities. These are generally not particularly large and so the partial equilibrium results will often be a quite sufficient basis for thinking about policy, but it is clearly useful to ask how the overall balance of the economy is affected. Moreover, by aggregating up and following the stimuli created by the PTA through all parts of the economy we are able to derive more convincing estimates of the overall welfare effects of the policy.

For these sorts of analyses the preferred tool for simulating the impact of PTA on included and excluded countries is Computable General Equilibrium (CGE) modelling. General equilibrium recognises that markets interact in complex ways such that everything depends on everything else. 'Demand for any one good depends on the prices of all other goods and on income. Income, in turn, depends on wages, profits, and rents, which depend on production, which depends on sales (this is, demand). Prices depend on wages and profits, and vice versa; supply and demand must be equal in all markets, including factor markets; and imports must be paid for by exports plus foreign borrowings.' (Schiff and Winters, 2003, p. 48). But of course nothing is free. The need to measure all these links makes CGE models less informative and detailed in other ways. Thus, for example,

the models are almost wholly based on *a priori* theorising about the economy and their results dependent on parameter values that have not been formally estimated. They are too complex ever to be thoroughly tested against actual evidence, and in fact any testing against actual outcomes is rare. A notable exception is Valenzuela et al., (2005). Conclusions drawn from CGE models on the effects of PTA are sensitive to the values chosen for tariff and NTB in the baseline scenario and simulation experiments. Moreover, because they model markets in a way that assumes that goods are differentiated by place of production, every good is unique and so tariff reductions tend to emphasise trade creation over diversion. (The simple substitution of one source for another is limited by the fact that every good is different, so that there is less scope for diversion from one source to another.) Given this, it is remarkable how often these models suggest that PTAs will be harmful to members. But having unique goods also ensures that tariff shocks will always affect prices to some extent, so these models also almost always suggest negative terms of trade shocks for excluded countries and thus predict losses for them.

Against this background, we now review some results from the CGE-based literature. Using a CGE model to calculate the effects of a Free Trade Agreement of the Americas, Brown, Kiyota, and Stern (2005) found that the elimination of tariffs on manufactures in the FTAA would lower welfare in all but two of the 16 non-participating countries and regions that were included in their model. They found the FTAA to be trade diverting for most of ROW, with a welfare reduction of $9.3 billion per year.

Francois, McQueen and Wignaraja (2005) conduct an analysis of the EU's PTAs with five of its trading partners (Chile, Mexico, South Africa, Egypt and MERCOSUR) and show that the benefits for the EU are estimated to be in the range of $9.1 billion annually (based on 1997 GDP). Most FTA partners (except Egypt) benefit from the direct effects of the agreement. However, most of the ROW loses, including countries such as Botswana, North Africa and the Middle East. The results for Botswana (with a loss of about $377 million annually) point to losses for Southern Africa in general[9]. Welfare losses for Botswana and Southern African from the EU-South Africa FTA are also confirmed by the GTAP study by McDonald and Walmsley (2003) who find that the losses in Botswana and the rest of SADC amount to $71.5 million and $14.2 million, respectively.

To summarise, assuming that the EU–India agreement actually achieves significant liberalisation between them, there is at least a strong probability that it will harm excluded countries. For several reasons, however, this harm may not be particularly large. In many cases excluded countries' trade completely different goods with the EU and India than those partners trade between themselves. In others, EU–Indian trade is sufficiently small that the impact of favouring it is likely to be small. In others, excluded countries have sufficient flexibility to use the resources released by trading less with the partners equally productively for other purposes, while in yet others they have sufficient other market opportunities to be able largely to ignore smallish shocks to EU or Indian markets. The remainder of this book is essentially devoted to testing and quantifying one part of these possibilities. It seeks to ask where trade overlaps and how important EU–Indian trade is. However, further study is needed to be able to say how easily excluded countries will be able to cope with, or accommodate, any negative shocks that emerge from that analysis.

Notes

8   Parts of this chapter draw on Chang and Winters (2002a) and its related literature.

9   'The BNLS (Botswana, Nambia, Lesotho and Swaziland) countries face, as a result of the combination of the customs union agreement with South Africa (SACU) and the EU-South Africa (RSA) free trade agreement, increased competition from the EU, both in their exports to, and in their imports from, South Africa and will incur a loss of tariff revenue (significant for Lesotho and Nambia) from the common revenue pool.' [All customs and excise duties collected by the five members of the SACU are pooled into a Common Revenue Pool and distributed to them according to a Revenue Sharing Formula. A significant component of the new formula is the customs component, consisting of all customs duties actually collected. According to the new formula, the sharing of the revenue from customs duties is to be determined on the basis of each country's percentage share of total intra-SACU imports, excluding re-exports, and not on the basis of SACU imports from the rest of the world.] 'South Africa is also a member of SADC and these southern African countries will face a loss of regional trade with South Africa as a result of the trade creation (*sic*) effects of the free trade agreements. In addition, unless South Africa offers the SADC countries preferences equivalent to those available to the EU there could also be significant trade diversion against SADC. These negative effects on regional trade are reinforced by the EU rules of origin which allow South Africa to cumulate origin with only one ACP (including SADC) country, while the producer in South Africa has to add 100 per cent to the value of imports of intermediate products from the regional partner in order to qualify for preferential entry into the EU market.' (Francois, McQueen and Wignaraja, 2005, p. 14)

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