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Trade and Welfare Effects of State Trading Entperprises

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TRADE AND WELFARE EFFECTS OF STATE TRADING ENTPERPRISES

Abstract

Much of the analysis of market access issues in the Doha Round negotiations involves clearly defined instruments of government policy covering *inter alia* subsidies, tariffs and tariff rate quotas. State trading enterprises are also on the negotiating agenda though there is comparatively little analysis of their impact on trade and welfare despite the fact that they will be addressed in the forthcoming negotiations. This paper addresses these issues and highlights that STEs both distort trade and reduce welfare. The extent of these effects depend not only on the monopoly/monopsony status of the enterprises but the nature of the pay-off function.

Keywords: State trading enterprises; trade negotiations.

JEL Classification: F12; F13: Q17

TRADE AND WELFARE EFFECTS OF STATE TRADING ENTPERPRISES

Introduction

Agricultural trade is a prominent feature of the on-going Doha Round of trade negotiations under the auspices of the WTO. Much of the focus of negotiations to date has related to market access issues and this has been reflected in a wide-body of analytical work that has focussed on traditional policy instruments that affect market access. These include most obviously export subsidies, tariffs and tariff rate quotas among others. However, state trading enterprises (STEs) have also been placed on the negotiating agenda (primarily relating to STEs involved in exports) but there is comparatively little theoretical analysis of the trade distorting effect of these enterprises and the factors are likely to influence the magnitude of these effects. This paper addresses this issue.

Drawing from recent theoretical research on this issue, the paper makes four important points that relate to the status of STEs in the WTO and the on-going negotiations. First, STEs do distort trade and as such act in a way that is comparable to traditional policy instruments that affect market access. As such, they also affect the overall level and distribution of welfare. Specifically, importing country STEs are equivalent to an import tariff while exporting country STEs act in a manner similar to an export subsidy. Second, the issue relating to STEs is primarily concerned with the nature of exclusive rights, the main concern of many participants in the WTO being concerned with the monopoly/monoposony rights bestowed on STEs. In large part, the likely welfare effect of de-regulating STEs will depend on the market structure that will arise in a post-STE environment and whether the STE co-exists with private firms. As such, the STE issue is one that is largely concerned with governments manipulating market structure in agriculture and related markets in a way that creates an external impact on other countries. Third, STEs are essentially a mechanism of government policy and as such may reflect the policy bias towards agriculture via the STE pay-off function. For example, in developed countries the pay-off function may reflect the bias of policy in that the aim is to re-distribute welfare towards producers while in emerging and developing countries, it may reflect a bias towards consumer welfare. We show that the trade distorting effect depends not only on the ‘single desk’ status of the STE but also on the nature of the pay-off function. Finally, although the current WTO focus on STEs relates to those involved in exporting, we show that this emphasis in mis-placed. Despite the negotiating stance taken by some large importing countries such as Japan and Korea, STEs in importing countries are equally valid targets for negotiation as they too affect trade and welfare. The overall message of the research reported here is that governments can influence market structure via the creation of STEs and the rights bestowed to them and that this form of government intervention, though in large part more difficult to measure as a comparative trade distorting policy, nevertheless has effects similar to those instruments that receive most of the attention from the policy and academic communities.

The paper is organised as follows. In section 2, we summarise the status of STEs in the WTO and their place in the current negotiations. In section 3, the trade distorting effects of STEs are addressed while in section 4 we report the concomitant welfare effects. In section 5, we summarise and conclude.

2. STEs in the WTO and Doha Round Negotiations

2.1 *Status*

It was understood from the inception of GATT 1947 that state trading enterprises have the potential to distort trade (see Article XVII:3). Their ability to do so is curtailed by Article XVII:1(a) through which STEs are required to act in a manner consistent with the GATT principle of non-discrimination and most-favoured nation treatment (Article I); and by Article XVII:1(b) through which they must act on the basis of commercial considerations (WTO 1995, p. 509-510). State trading enterprises in importing countries are not allowed to maintain mark-ups higher than the bound tariff levels (Ad Article XVII:4(b)) and these mark-ups should be transparent and notified to interested members (Article XVII:4(b)). Importantly, the pursuit of commercial considerations allows STEs in exporting countries to price discriminate amongst markets (Ad Article XVII:1).[1]

In the *Understanding on the Interpretation of Article XVII of the General Agreement on Tariffs and Trade 1994*, a state trading enterprise is defined as:

> Governmental and non-governmental enterprises, including marketing boards, which have been granted exclusive or special rights or privileges, including statutory or constitutional powers, in the exercise of which they influence through their purchases or sales the level or direction of imports or exports. (WTO 1995a, p. 25)

It is important to note that the ownership of the STE is not a criterion for an enterprise to be classified as an STE. It is purely the existence of exclusive rights that define an STE and which distinguishes it from a commercial firm.

By establishing in 1995 a Working Party which reports to the Council for Trade in Goods, the WTO has given more weight to state trading enterprises than did the GATT. The Working Party has sought information from Members on the objectives of their state trading enterprises, the functions of these STEs and the extent of their links with government. This information is economy-wide and is not restricted to the agricultural sector. The Working Party found a wide range of objectives of state trading enterprises including, *inter alia*, income support for domestic producers and control of foreign trade operations (OECD 2001, p. 15).[2] One of the current issues with STEs in the context of the WTO is the inadequacies of this monitoring procedure and the fact that it is not fully observed by the contracting parties.

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[1] Restrictions on the behaviour of state trading enterprises are not limited to Articles I, II and XVII. State trading enterprises are also mentioned in Article III (National Treatment on Internal Taxation and Regulation), Ad Article XI (General Elimination of Quantitative Restrictions), Ad Article XII (Restrictions to Safeguard the Balance of Payments), Article XIII (Non-discriminatory Administration of Quantitative Restrictions), Article XIV (Exceptions to the Rule of Non-discrimination), Article XVI (Subsidies) and Article XVIII (Governmental Assistance to Economic Development), in terms of import or export restrictions made effective through state trading operations. Therefore, the activities of STEs are very obviously constrained: in principle, by the adherence of members to these Articles and, in practice, by recourse if necessary to the Dispute Settlement Body.

[2] There have also been a recent dispute panel relating to the Canadian Wheat Board. Interestingly, one of the issues raised by the US was how the objectives of an STE may differ from those of private traders.

2.2 *STEs in the Doha Round Negotiations*

Despite the constraints placed upon STEs by the WTO and the monitoring of their activities to ensure compliance, some governments remain uneasy about the activities of STEs in the agricultural sector. Between March 2000 and March 2001, members of the WTO presented to the Committee on Agriculture their proposals for the negotiating agenda on agriculture, as provided for in Article 20 of the WTO Agreement on Agriculture. In at least seven of these submissions, state trading enterprises were mentioned as an item for the agenda.

In the submission from the United States (WTO 2000a), there was the proposal that single desk STEs in both importing and exporting countries should no longer have exclusive rights. Of course, under the working definition of an STE, such entities would no longer be STEs. The European Union in its submission (WTO 2000b), argued, *inter alia*, that state trading enterprises are subject to less stringency than export subsidies, despite their potential trade distorting effects. In the submission from Japan (WTO 2000c), there were detailed proposals for the reform of state trading enterprises but only those that export. The argument was advanced that, while importing country STEs affect only the importing country (*sic*), those in exporting countries affect the entire international market. Four other proposals are worth noting. Korea (WTO 2001a), like Japan, ignored the trade distortion induced by importing STEs and only expressed concern about the potential for exporting STEs to circumvent the constraints imposed on the use of export subsidies by the Agreement on Agriculture. Mali (WTO 2001b) proposed that, in the international cotton market, developing countries should have the right to continue to use STEs. Mauritius (WTO 2000d), as a small island developing state, argued that state trading enterprises play an important role in buffering such economies from price and quantity surges, and they provide some countervailing power internationally. The Mercosur countries plus Chile and Colombia argued that "[i]t is a cause for concern that under the pretext that some form of agricultural production and trading management is needed, monopolistic enterprises interfere in the free operation of the market, in ways which are contrary to WTO rules and discipline." (WTO 2001c)

In the proposals of the major players (the EU, Japan and the US), there appears to be a presumption that the exclusive or special privileges given to state trading enterprises provide them with monopoly/monopsony powers and that these powers distort international markets and circumvent international obligations. However, it is evident that some small countries have the view that a state trading enterprise is a beneficial policy instrument which provides stability, food security and countervailing power.

In the Harbinson text (WTO 2003a), it was proposed (Attachment 3) that importing STEs, *inter alia*, should conform with the requirements laid out in Article XVII of the GATT, while taking into account the needs for food security and livelihood security in developing countries. It was also proposed (Attachment 7) that exporting STEs, *inter alia*, should conform with Article XVII, that they should not operate in a way which undermines the constraints placed on the use of export subsidies, and that they should lose their exclusive rights. For the Cancún Ministerial Conference, all reference to importing STEs had disappeared, while the reference to exporting STEs mentioned only that the issue remained of interest but that the details had not been

agreed (WTO 2003b). In the follow up to the "Framework Agreement", it is indicated that a number of aspects of exporting STEs are under discussion. In general, the focus of the negotiations is on exporting STEs rather than those involved with imports. In the following sections, we show that the bias is mis-placed as both have the potential to affect trade.

3. Trade Effects of STEs

The underlying presumption of the issues addressed in the current negotiations is that STEs have the potential to distort trade. If this is the case, they will therefore affect market access and welfare in a manner similar to traditional trade policy instruments. Yet, there is comparatively little literature to address and investigate the claims made by both sides on the STE issue[3].

It is, in principle, no straightforward matter to model the trade and welfare effects of STEs. There are several issues that need to be addressed. These include the nature and extent of the exclusive rights that they are given and their objective(s) differ from country to country and from commodity to commodity. Even once these characteristics have been identified, there remains the issue of what market structure might evolve to replace a particular form of STE once its exclusive right is removed. Moreover, there are important differences between STEs that arise in exporting countries compared to those that arise in importing countries. In the former, there is the potential to price discriminate between the home and export markets while an importing country may be able to take advantage of terms of trade effects and exert monopsony power with respect to import purchases. Moreover, and reflecting the issue about 'commercial concerns' or the deviation from them, STEs may not necessarily be profit maximising entities but may be concerned with the re-distribution of welfare, the bias in the pay-off function of the STE reflecting the overall bias of government policy.

Finally, close observation of STEs in many countries shows that the nature of exclusive rights may differ across countries and even across commodity sectors within the same country. For example, in an exporting country, the STE may have authority over domestic procurement and sales and export (as in Canada) whereas in others it may have authority over exports only and compete with the private sector (as in Australia). These differences matter. Similarly, a wide array of permutations can arise with respect to STEs in importing countries. For example, in Korea where STEs are involved across many commodity sectors, the extent of the special rights and privileges that apply to the STE can vary. This gives rise to a related issue; STEs may only partially lose their exclusive rights in the process of de-regulation but may still retain authority over aspects of procurement and/or distribution and compete with the private sector. These differences in the nature of the exclusive rights across STEs can influence the magnitude of the trade distorting effect a specific STE can cause and hence suggests that the trade distorting effect is dependent on country and commodity-specific characteristics.

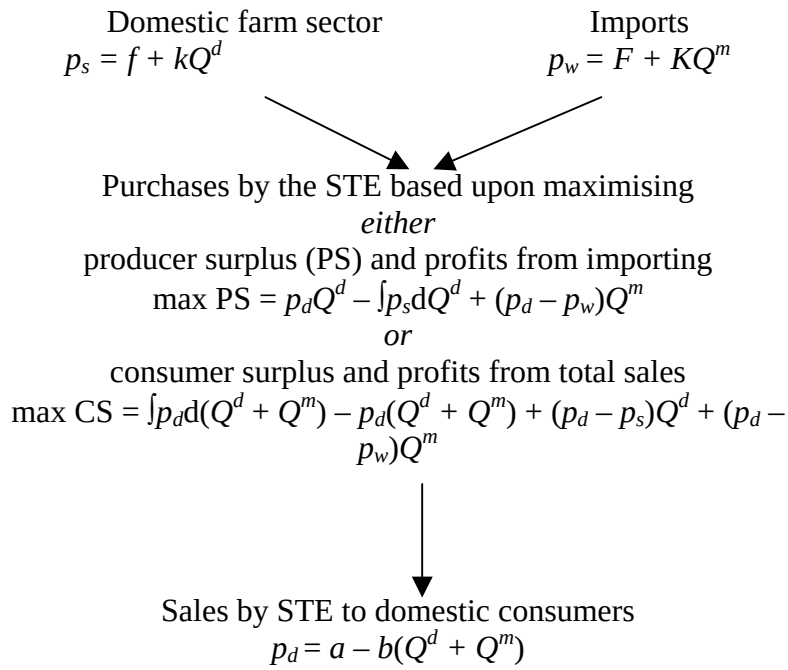
[3] There is a related literature in public economics that focuses on the role of the public firm that may or may not compete with the private sector (mixed oligopoly). However, much of this literature essentially focused on the closed economy case and does not consider the external impact of the public firm on foreign competitors.

In recent research, we have highlighted many of these issues in formal theoretical models which form the basis for the results we report here. However, given limitations on space and to keep the presentation manageable, we omit the algebra underlying the theoretical modelling process and highlight the model set-up in an intuitive manner. Moreover, despite the discussion above relating to differences in the nature of exclusive rights bestowed on STEs, in order to highlight the extreme possibilities, it will be assumed for present purposes that in both the importing and the exporting cases the STE has single desk status. It will also be assumed that, once the exclusive rights have been removed, the market structure becomes one of a few firms that compete on quantity[4]. Of course, the outcome could be one in which the STE loses its exclusive rights but it continues to exist in competition in a deregulated market with domestic, commercial firms. Although this will affect the overall outcome, the basic insights into the potential trade distorting effects of STEs can be found in the more extreme single desk case.

3.1 *Importing STE*

Assume that the STE has exclusive rights to purchase from domestic producers and to import. Consequently, it has sole rights to satisfy domestic demand. The objective of the STE is either to maximise producer surplus, in addition to maximising its profits from imports or to maximise consumer surplus together with profits from total sales. These alternative characterisations of the pay-off function for the STE captures the bias of agricultural policies likely to arise in developed and developing countries. The model of the importing country STE can be illustrated as in Figure 1, where Q^d are domestic purchases and sales, and Q^m are imports and sales.

Figure 1: Structure of the Importing Country Case



[4] This addresses overall concerns by supporters of STEs that the food sector may be imperfectly competitive and that in the absence of an STE, private firms may exploit market power vis-à-vis producers and/or consumers.

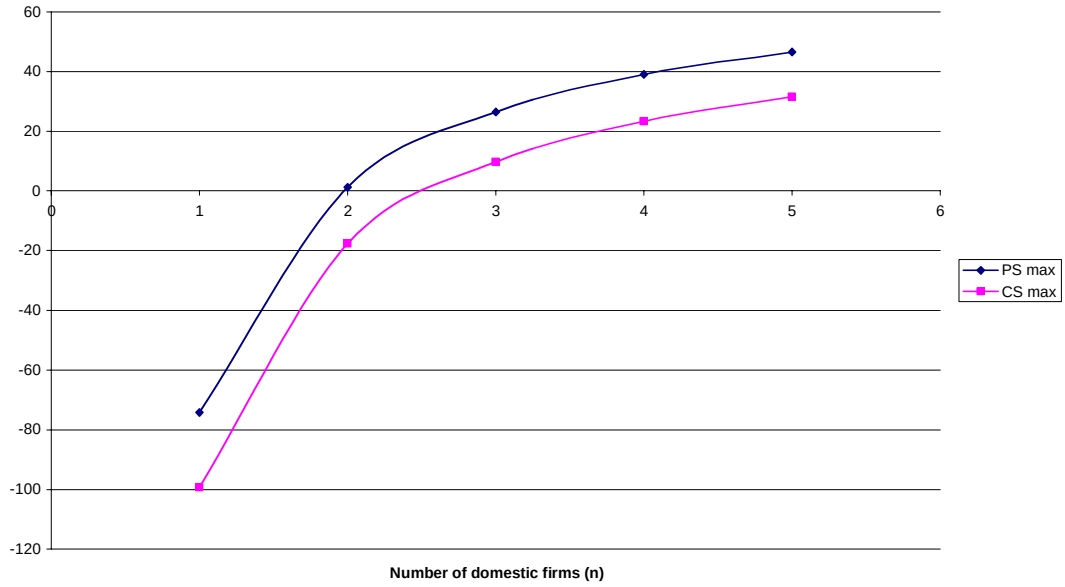
Compare the case in which the STE maximises producer surplus and its own profits from importing, with that of a profit-maximising, single commercial firm. Intuitively, the STE will buy more from domestic producers because it will not exploit its monopsony power; since it procures more from the domestic agricultural sector, it will therefore import less in order to satisfy domestic demand. Consequently, as compared with a benchmark of only a single commercial firm, the STE will act like a tariff since the level of imports will be lower compared to the private firm benchmark. This intuition can be generalised to a benchmark of many commercial firms; intuitively, as the underlying benchmark becomes more competitive, private firms are less able to exert oligopsony power and hence procure and sell more of the product originating from the domestic agricultural sector. The presence of the STE is therefore diluted and the tariff equivalent will be lower compared to a more competitive underlying private firm benchmark.

Now compare the case in which the STE maximises consumer surplus and its own profits from purchasing imports and domestic production. From the consumer surplus part of its objective function, the STE will want to import more than the commercial firm in order to reduce the consumer price and thus increase consumer surplus. At the same time, it is also attempting to maximise profits from selling the product from both sources. Therefore, compared with the commercial firm, the STE's pursuit of profit is compromised by its concern for domestic consumers. It would be expected that the STE may import more than the commercial firm and, therefore, act like an import subsidy. Again, the size of this effect depends on the competitiveness of the underlying benchmark.

In order to substantiate this intuition, a calibrated model was used to show the import tax equivalent of the STE when measured against alternative benchmarks.[5] It is clear from Figure 2, that the intuition about the STE that maximises producer surplus is correct. Such single desk STEs do distort trade. However, the size of the distortion depends not only upon the benchmark (the value of n) but upon the objective of the STE. If the STE is concerned with the welfare of consumers, it acts like an import subsidy relative to a small number of commercial firms ($n < 3$) but compared with a benchmark with more firms, it acts like a tariff. Note, however, that for a given n ($n \geq 3$) the size of the tariff equivalent is considerably smaller when the STE is concerned about consumers rather than producers. Although not explored here, the tariff equivalent of the STE also depends upon the elasticity of the import supply function (i.e. whetherthe country is small or large which captures the extent to which it can influence its terms of trade vis-à-vis import purchases). Taken together, these results contradict the claim made by both Japan and Korea that importing STEs do not distort international markets. Both these countries are well-known users of STEs in agriculture and where the bias of policy is strongly in favour of producer. The theoretical model suggests that STEs *do* distort trade: by importing less than commercial firms in general, they hurt exporting countries through reducing both export volumes and the export price.

[5] The parameter values used are taken from McCorriston and MacLaren (forthcoming a).

Figure 2: Trade Distortion of an Importing STE



3.2 *Exporting STE*

In the case of the exporting STE, three countries (regions) are required. The modelling of the STE is essentially different from the import case. In the latter, the focus is on the STE that can procure in the domestic and import market and sell as a single agency to domestic consumers. In the export case, the STE procures from a single source (i.e. domestic agriculture) but can price discriminate between the home and foreign market in which it competes with foreign privately-owned firms. We assume for present purposes that the Home country has a single desk STE which has exclusive rights in the domestic market and the export market. It is assumed that the STE's objective is to maximise producer surplus. The Foreign country has a given number (m) of profit-maximising firms which sell domestically in Foreign and which export. The STE in Home and the m firms in Foreign export to a third country (Importing region) which is represented by an import demand function. The model of the exporting STE is illustrated in Figure 3.

Figure 3: Structure of the Exporting Country Case

Domestic farm sector

$p_s = f + k(y + x)$

Purchases by the STE based upon maximising producer surplus

max PS = $p_d y + p_w x - \int p_s \mathrm{d}(y + x)$

Sales by the STE to

domestic consumers: $p_d = a - by$

to export: $p_w = a_w - b_w(x + X)$

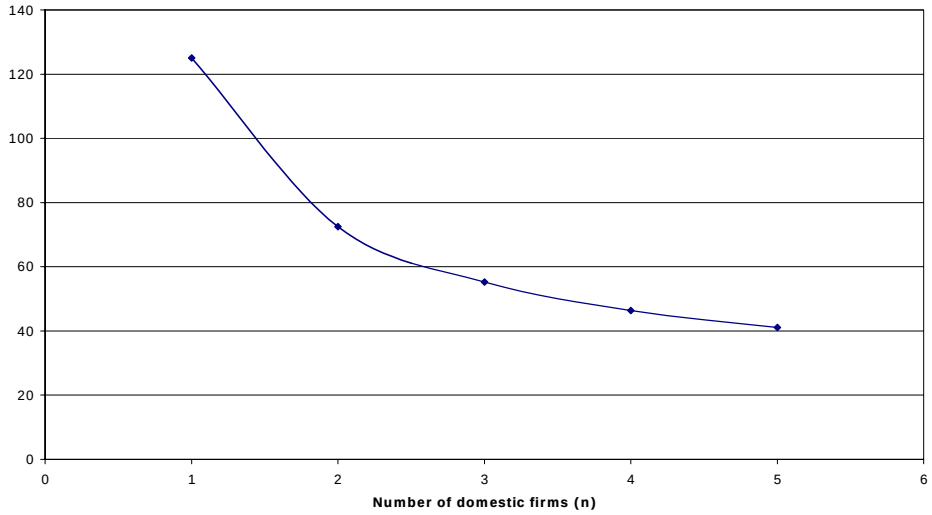
In Foreign, the structure is the same except that commercial firms play the role of the STE in Home, where y is domestic sales in Home, x are exports from Home and X is exports by Foreign (Figure 3).

Compare the case in Home with the STE relative to the benchmark. Since the STE's objective is to maximise the producer surplus of its input suppliers, it will not exercise monopsony power and, consequently, it will buy more and sell more than a single commercial firm. Because it has single desk status, it can price discriminate between the domestic and export markets, something which many commercial firms would find more difficult to do since the ability to price discriminate diminishes as the level of competition increases. Even if the Home market was characterised as a duopoly, a single desk STE would more effectively price discriminate between the Home and Foreign markets. Therefore, it would be expected that, compared with the benchmark, the STE will sell less domestically and export more and hence be equivalent to an export subsidy. However, as the benchmark becomes more competitive, the overall level of procurement from agriculture increases, this raising the level of exports. We should therefore expect the subsidy equivalent effect to diminish as the non-STE benchmark becomes more competitive.

This intuition is again tested using a calibrated model.[6] The results are shown in Figure 4 (with $m = 5$). The exporting STE acts like an export subsidy and the Home country with an STE will export more than it would with a single commercial firms. Again the size of the distortion created by the STE depends upon the benchmark, the greater the number of firms that would replace it, the smaller is the distortion. Nevertheless, by exporting more than the benchmark, the STE reduces the export volume from Foreign and the price that it receives in the Importing region. At the same time, the Importing region benefits from the STE through being able to import more.

[6] The values of the parameters corresponding to those in Figure 3 are taken from McCorriston and MacLaren (forthcoming b).

Figure 4: Trade Distortion of and Exporting STE



4. Welfare Effects of STEs

It has now been established that both importing and exporting STEs distort international trade in pursuit of the objectives laid down for them by their respective governments. But as well as distorting trade flows, STEs will affect welfare. To investigate these welfare effects, the models that were used above for the importing and the exporting STE were used to measure the welfare effects of each type of STE. The results are reported in Figures 5 and 6[7].

Removing either an STE which maximises producer surplus or one which maximises consumer surplus, in addition to its own profits, leads to increases in consumer surplus, producer surplus, profits and overall social welfare (Figure 5). It is clear from this Figure that an STE which maximises producer surplus harms its domestic consumers to a substantial degree because once the STE is removed, consumer surplus rises by 99 per cent. Even producer surplus is greater in the benchmark of n = 5 firms than it is with the STE. Overall, a producer surplus maximising STE is more damaging to social welfare than the STE which maximises consumer surplus. Social welfare increases by 49 per cent if an STE is removed that maximises producer surplus and by 22 per cent in the STE that is removed maximises consumer surplus.

In the case of the exporting STE, removing it and creating a benchmark of n = 5 commercial firms (m remains at 5), also generates gains to the Home country (Figure 6). However, not only does the Home country gain (social welfare doubles) but so too does the Foreign country (by 1 per cent) which competes in the Importing region. The Importing region loses by 25 per cent because exports in total fall relative to their value when the STE is in place and they fall because Home exports less in the benchmark than it does with the STE.

[7] The price and quantity effects are derived from the theoretical frameworks reported in McCorriston and MacLaren (forthcoming a and b).

Figure 5: Welfare Effects of Removing an Importing STE

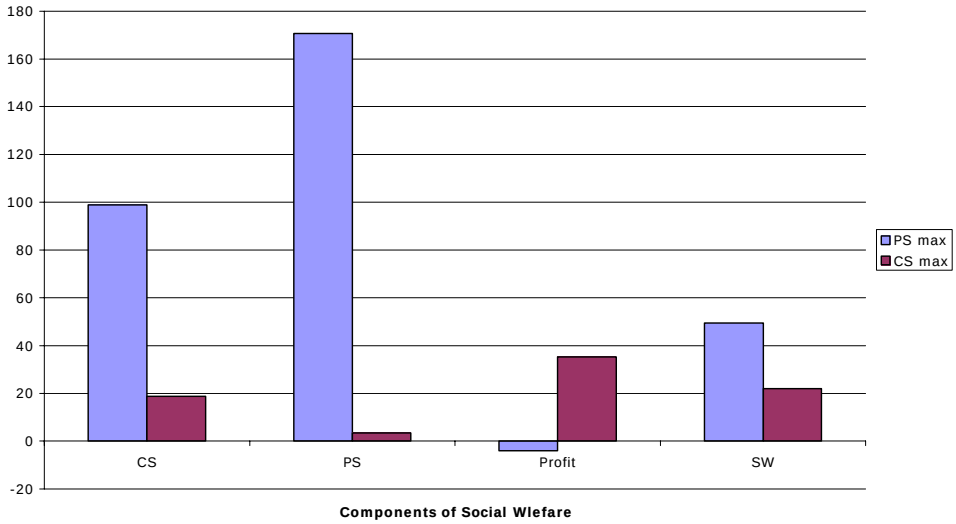
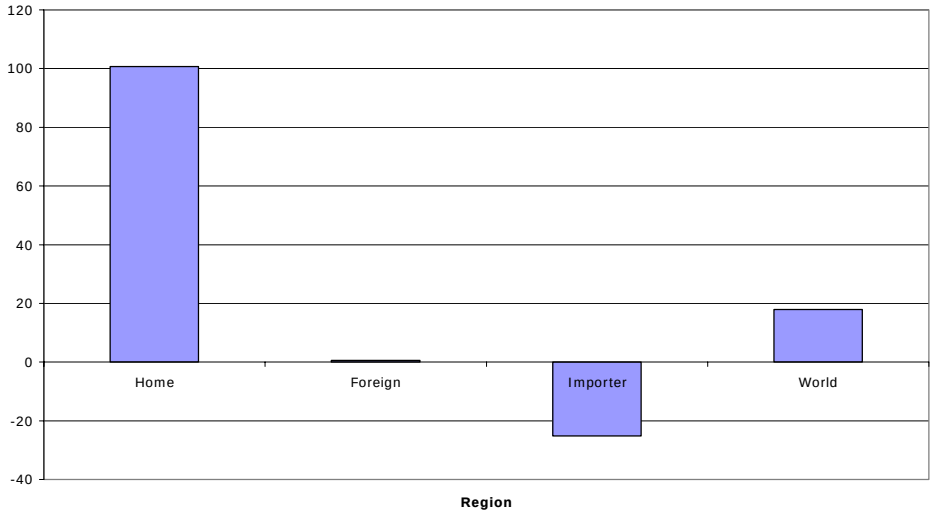


Figure 6: Welfare Effect of Removing an Exporting STE



5. Summary and Conclusions

State trading enterprises are on the Doha Round agenda in due in large part to the view that STEs may distort trade. However, the academic literature relating to the potential trade distorting effect is relatively thin. Moreover, the current focus of the trade negotiations has been on exporting country STEs, the issue of importing country STEs being largely side-stepped. In this paper, we have presented results developed from recent theoretical work that addresses issues relating to the trade and welfare effects of STEs. There are three important points to draw from this analysis. First, STEs *do* distort trade in a manner comparable to other but more traditional trade policy instruments. As such, they affect market access and welfare. Second, the extent of these trade distorting effects depend broadly on two main factors: (a) the nature of competition that would arise in the absence of the STE and (b) the bias in the STE pay-off function. As such, in recognising that STEs are essentially an instrument of

government policy, the effect of the STE on market access will likely depend on the overall bias of government policy towards agriculture. STEs therefore are not just about numbers (i.e. the monopoly and monopsony status of these entities) but also the overall re-distributive aims of government policies. Finally, the bias in the current Doha Round negotiations towards exporting STEs is essentially mis-placed. Importing country STEs also distort trade and failure to deal with them will leave an important barrier to trade untouched. Despite this omission, the overall conclusion of this research is to support the overall conclusion that STEs have a rightful place on the current Doha Round agenda.

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