International Agricultural Trade
Research Consortium

Competition Policy and International Agricultural Trade

by
Donald MacLaren and Tim Josling*

Working Paper #99-7

The International Agricultural Trade Research Consortium is an informal association of University and Government economists interested in agricultural trade. Its purpose is to foster interaction, improve research capacity and to focus on relevant trade policy issues. It is financed by United States Department of Agriculture (ERS, and FAS), Agriculture and Agri-Food Canada and the participating institutions.

The IATRC Working Paper series provides members an opportunity to circulate their work at the advanced draft stage through limited distribution within the research and analysis community. The IATRC takes no political positions or responsibility for the accuracy of the data or validity of the conclusions presented by working paper authors. Further, policy recommendations and opinions expressed by the authors do not necessarily reflect those of the IATRC or its funding agencies. For a complete list of IATRC Working Papers, books, and other publications, see the IATRC Web Site ***http://www.umn.edu/iatrc***

A copy of this paper can be viewed/printed from the IATRC Web Site indicated above.

*Dr. Donald MacLaren is a Professor in the Department of Economics at the University of Melbourne and Dr. Tim Josling is a Professor and Senior Fellow in the Institute for International Studies at Stanford University.

Correspondence regarding this paper should be addressed to:

Dr. Tim Josling
Food Research Institute
Stanford University
Stanford, CA 94305-6084

.

July 1999
ISSN 1098-9218
Working Paper 99-7

Competition Policy and International Agricultural Trade

Donald MacLaren and Tim Josling*

1. Introduction

During the 1990s, the nexus of trade, investment and competition policies has begun to take centre stage in discussions about, and analysis of, the international economy. Increasingly, firms are using new combinations of trade, foreign investment and collaborative agreements to expand their operations internationally. The result is that there are ever-increasing flows of goods and services, investment, technology and people across national boundaries (Zampetti and Sauvé 1995, p. 14). These firms are subject to internal economies of scale and, in order fully to realise these economies, they must have market access and market presence. Impediments to market access and presence, such as trade policies, restrictions on inward investment and domestic competition laws, all play an important role in determining the extent to which the static and dynamic efficiency gains are realised. Therefore, globalisation of firms' activities has important implications for nations' trade, investment and competition policies and their interrelationships.

Until recently, trade policies and competition policies have been seen as quite separate sets of instruments.[1] Government restraints on trade, i.e., how commerce is regulated between nation states, are governed by the WTO or by bilateral or regional agreements; private restraints on trade, i.e., how commerce is regulated within states, are governed by the competition laws of nations (Fox 1995, p. 172). Globalisation, by increasing the importance of extra-national economic activity, has made this separation increasingly at odds with reality. The construct of the nation state engaged in trade based upon comparative advantage bestowed by factor endowments that are not internationally mobile, is no longer adequate. While the nation state remains as the basic entity in terms

---

* The authors are, respectively, Professor, Department of Economics, University of Melbourne, and Professor and Senior Fellow, Institute for International Studies, Stanford University.

of the organisation of governance, the international firm is now the basic organiser of economic activity with a global rather than a national interest (Hart 1995). However, any suggestion to remove this partitioning of policies in order to make the globalised market work more efficiently, immediately raises the issue of national sovereignty and the potential conflict between maximising the welfare of the individual nation and maximising global welfare.

As a result of these developments, competition policy is emerging as a major new issue for the international trading system. On the one hand there is a wide dispersion of different policies towards the promotion of competitive markets among trading partners. Conflicts among these policies will undoubtedly spread. Some countries have little in the way of competition policies, and so an attempt is likely to be made before long to persuade countries to adopt at the least a minimum level of anti-trust legislation. On the other hand the opening up of national markets to trade raises serious issues as to whether domestic anti-trust policies, even if mutually compatible, are adequate in the global marketplace. The domestic competition policies may at the same time be less necessary for their traditional purpose, as imports restrain the market power of domestic firms, but also be more needed for a new task, if firms can exploit the larger international market.

Agriculture and the associated parts of the food and input supply industries have become a global sector. No longer can one assume, if it were ever true, that the agri-food business is a model of a competitive sector populated by large numbers of firms engaging in arms-length transactions. Market structure is a live issue in the industry. The paper begins with a discussion of the agricultural trade policy issues that overlap with competition policy. Specific examples are given for the agricultural and food sectors which will illustrate the range of competition issues which are likely to arise as a result of both the globalization of the food sector and the spread of stronger trade rules to the agricultural industry. This is followed by a suggested framework within which to examine competition issues, and this leads to a discussion of the relationship between trade liberalization and competition

---

[1] This separation has been due in large part to the non-ratification of the ITO, Chapter 5 of which dealt with restrictive business practices (Lloyd and Sampson). See also Trebilcock (1996) for a brief synopsis of international efforts to link competition and trade policies.

policy. The paper concludes with some observations on the negotiating agenda and where some of these issues may appear.

2. Trade and Competition Issues in the Agri-food sector

The agri-food sector is now "global", in that both international trade and foreign investment are a substantial part of the food system. State enterprises and multinational firms play an important role in the food system. Global trade rules for agriculture were agreed in the Uruguay Round of trade negotiations. Competition regulations at the domestic level often give special treatment to agricultural markets. At the international level, almost no discussion has taken place on the way in which global agricultural markets could be regulated for non-competitive behavior.

The set of issues in agricultural markets that could be included under the definition of competition policy used above span the entire food chain. Competition issues arise in the farm input sector, with respect to the market structure of the seed and agro-chemicals industries. They are also present in the grain handling sector, dominated by state run agencies as well as large private concerns and in the processing sector, particularly for livestock. Other issues arise in the retailing sector, such as the market position of supermarkets and supply chains in the provision of food. But they also include the impact of the method of allocation of tariff rate quotas as a result of tariffication, the "patentability" of life-forms and the determination of geographical labels and rules of origin for regional foods. These issues are discussed below, by "stage" of the food chain, and will be referred to again in the "framework" section of the paper.

Competition Issues in the Input Supply Markets

One of the competition issues that is most apparent in the agri-food sector is the increasing concentration of firms in the input supply sector. It has been true for years that agricultural chemicals and agricultural machinery are sectors dominated by a few large firms. More recently, concerns have been voiced about concentration in the seed industry, where a small number of firms produce much of the seed sold to farmers in the US. This concentration is in particular a result of mergers in the "life-science" industry, including the companies that employ biotechnology to produce pharmaceuticals and agricultural

products. This concentration reflects in part the high research and testing costs and the long delays before products come to market. As these firms move into the biotechnology of seed development so they are going to wish to see profits from their investment in research. As discussed below, intellectual property rights are now respected by most major trading countries, as a result of the agreement on Trade Related Intellectual Property Rights (TRIPS) negotiated in the Uruguay Round.

Not everyone agrees that living organisms can be protected from copying or replication. Nor do they appreciate the fact that companies can continue to charge fees for the use of seed each year. Farmers have argued the case that they should at the least be allowed to retain seed for their own use. The seed companies claim that they need the revenue for product development. The seed firms have suffered some bad press as a result of their experimentation with so-called "terminator" genes which would render the plants sterile and hence make it impossible for farmers to retain seed. Some assurance that the seed companies do not exploit their market position too aggressively may well have to be negotiated in the next round of trade talks.

Competition at the Farm level

Concentration among input suppliers within an increasingly global market has implications for farmers in many countries. A parallel concern in the more developed world is that there is the trend for the seed companies themselves to become associated with the firms that buy the produce. Farmers naturally feel that they are caught in the middle of a commercial operation in which they buy from, and sell to, related corporations. Both their freedom of decision-making and their profit margins are possibly compromised. The firms themselves argue that many alternatives exist, both for provision of seeds and the sale of the produce, and that these options effectively constrain their market power.

Farming has always presented itself as the archetype competitive sector. Small family producers make independent decisions on output level and input use, subject to their own knowledge of technology and their own financial resources. In particular, farmers have traditionally had a range of outlets for products. In recent years this pattern has been rapidly disappearing. There has been a changing relationship between the agricultural

sector and other parts of the agribusiness chain. In essence, while much attention has been given to the increasing size of farm, and the smaller number of individuals engaged in agriculture, the bigger story may be the growth of contract farming. The farm operator under such conditions becomes responsible for managing a part of an integrated production process but has relatively less control over the decisions taken. This can be seen most clearly in the poultry sector, where inputs are carefully specified and output pre-sold. Pig production as well as fruit and vegetable farming is going the same way. Dairy farming, under strict quotas and quality standards is almost as circumscribed. And now, with the advent of designer corn plants and the spread of biotechnology to the seed industry, the cereal and oilseeds sectors are going the same way.

The farmer-as-manager model may be satisfactory from an income perspective. Returns are more secure and the farmer may be assured the latest technology. But some tensions are bound to arise, in particular if some of the firms are not local. This could also cause tensions when different farm structures compete in world markets. The issue is whether the farm sector will be strengthened by the vertical integration with suppliers, processors and packers or be forced to compete as commodity producers with other farmer-managers in other countries.

Competition in the Processing and Trading Sector

The Uruguay Round took a major step forward in obliging countries to convert non-tariff barriers to tariffs. But the act of tariffication itself exposed the underlying market structure of the agri-food sector, at least in the trading sector. Those countries that employ state trading enterprises to regulate domestic markets have come under scrutiny. There is a concern that the parastatal importers, if they have exclusive rights, can keep protection higher than allowed under the WTO (i.e. higher than the bound tariff). Moreover, many are asking whether there needs to be some sort of agreement at the multilateral level to maintain or enhance competition in national and international markets. This immediately raises the issue of whether agricultural markets should be obliged to become more contestable or whether state (and private) monopolies will be allowed to persist. Accordingly the WTO is more closely monitoring the activities of state trading enterprises and could soon begin negotiations to limit further their scope.

A similar situation exists with respect to exporters. State trading export entities may have the exclusive rights to sell domestic products. In this case the exploitation of monopoly rights in export markets is unlikely to be welcomed by foreigners - although other suppliers may incidentally gain from the monopolist's use of market power.

One manifestation of this is the long-running question of the Canadian grain system. There is currently controversy about the economic performance of the CWB as a monopoly buyer of Western grains. Is the domestic monopsony position of the CWB a problem for grain market efficiency? Could the CWB become a competitive marketing institution with no exclusive market privileges? Do the recent changes in the Australian Wheat Board have implications for changes in the CWB? Will the recently announced changes in the governance of the CWB make such a transition easier?

The US in general has less state intervention in trading, but the dairy sector is dominated by a series of Federal and State marketing orders for milk which act in ways similar to the decisions of a parastatal body. Are these marketing orders interfering with the efficient development of a competitive dairy sector? Or is the advantage of market organization and segmentation great enough to outweigh the costs of regulation and control?

In addition to the question of STEs, the act of tariffication raised the issue of private market power in the food processing and marketing sector. It has been well established that the effect of a tariff differs depending on whether the market structure is competitive or not. Under less than perfect competition, trade barriers influence the behavior of private firms. This suggests that commodity markets, which are not always competitive, may not distribute returns in a competitive way.

In many societies, agricultural firms and cooperatives are exempt from the normal anti-trust laws. The original justification for this was presumably that farmers needed all the help that they could get against the predations of large firms on the buying or the selling side. But very often the exemption extended to the firms and cooperatives and other

marketing institutions. One aspect of the current rethinking of competition law and agriculture is whether these exemptions are appropriate in the newly reformed markets.[2]

The Distribution Sector

The concentration of the food retailing sector is a development which is causing concern in some countries. The problem for food consumers and farmers alike is the extent to which these segments of the food chain can extract rents from others. When those "others" are overseas, the issue becomes one of international concern. This is happening as the supermarket chains spread their operations abroad. No-one has yet suggested that these firms be constrained, but their actions will no doubt be watched in particular by developing countries concerned about "supermercado colonialism".

One issue that has a direct bearing on the competition question is that of allocating the Tariff Rate Quotas (TRQs) which were introduced to ensure some degree of market access when tariffs were introduced. These TRQs invite non-competitive behavior. The allocation of TRQs has left the WTO some tricky commercial policy problems. The underlying problem with the EU banana regime is that basic quotas for the importation of Central American bananas into the EU are allocated in a way that is designed to generate rents to one group of shippers rather than another. The regularization of quota allocation is a priority issue for the next WTO round.

Other issues also related to intellectual property and the distribution chain include the protection of geographical names and other trade marks commonly used in food and beverages. Some types of foodstuffs received special mention in the Agreement on Technical Barriers to Trade (TBT Agreement), such as wine. But there are a number of food products that are presently covered in ambiguous ways. The growth of region-specific marketing has tested international law in this area. The same dilemma occurs here as in other markets. Some degree of protection based on geographical origin is no doubt desirable, if only to assure the consumer of the provenance of the good. But a market segmented by officially sanctioned "appelations" is also a market ripe for

---

[2] An example of rethinking market power exemptions after liberalisation is to be found in the Treaty of Rome, which applied EC competition rules even to agricultural enterprises. As a result, most marketing boards gave up their exclusive rights to domestic markets within Europe.

exploitation by firms seeking to keep out foreign competition. The governments will have to tread a fine line to preserve competition in this expanding area of differentiation by production location and conditions.

3. International Rules on Competition Policy

To a limited extent, the implementation of the Uruguay Round Agreements and the establishment of the WTO have already put in place a set of international rules and a means of enforcing them that will improve the competitive environment under which international trade in goods, services and investment, will take place. Nevertheless, to many commentators, e.g., Hoekman and Mavroidis (1994 and 1996), Lloyd and Sampson (1995), OECD (1995), Petersmann (1996), Tharakan and Lloyd (1998), Trebilcock (1996), Waverman *et al.* (1997) and Wood (1996), more needs to be done on competition policy in order to obtain the full benefits of a globalised economy. It has been acknowledged since the completion of the Tokyo Round in 1979 that the lowering of trade barriers has revealed previously obscured domestic impediments to trade (Lloyd and Sampson 1995). Of course, competition policy *per se* is only one set of instruments available to improve the efficient operation of markets. Other commentators, e.g., Hart (1995), would add to the competition agenda such topics as innovation policy, subsidies, regulatory policies, product standards, labour/social policy, trade/environment issues and enforcement, all of which influence the contestability of international markets.

Various proposals have been discussed about the best way to proceed on achieving international agreement on trade-related anti-trust principles (TRAPS), given the tension between national sovereignty and global welfare and the potential for competition policy to distort international trade (Hoeckman and Marvoidis 1994). These proposals range from, at one extreme, a supranational competition authority which would oversee adherence to a world competition code, to a cooperative arrangement amongst national competition authorities at the other (Fox 1996, p. 173; Hoeckman 1997).

Anti-dumping rules are at present the main "international competition policy". Many trade economists would like to see this aspect of the issue incorporated in a wider approach to competition regulation. But in addition to anti-dumping and anti-trust policies, a number of other aspects of competition are of growing importance. The rules

for intellectual property are a major factor in determining the competitive conditions in global markets. New trade rules, incorporated in the TRIPS agreement, have widened the scope for intellectual property protection. This may in turn require increased observance to ensure that acceptable policies to encourage research and development do not also generate unacceptable barriers to entry. Similarly, the role of the state in both domestic and international trade is also an important influence on the contestability of markets. Trade rules may need to be revised to ensure that state trading policies are consistent with the aims of the trade system to develop on the basis of competitive markets.

Trade Rules

Prior to the implementation of the Uruguay Round Agreements, national trade policies were restrained by GATT 1947. These Articles contained nothing on competition policy per se, although clearly, adherence to them affected the conditions for contestability. It has been noted by some authors (e.g., Hoekman and Mavroidis 1994, Hoekman and Kostecki 1995, and Lloyd and Sampson 1995) that several of the Uruguay Round Agreements have been written with conditions for competition in mind. The General Agreement on Trade in Services (GATS) contains specific Articles which deal with business practices, e.g., Article VIII which prevents the abuse of monopoly power, and Article IX which prevents the suppliers of services from restraining competition and trade. Enforcement of these provisions is through domestic laws, with consultations among members as the vehicle for eliminating illegal behaviour. The objective of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) is to achieve fair trade in intellectual property (Lloyd and Sampson 1995). In particular, there are two Articles that are concerned with competition, namely, Article 39 which deals with "effective protection against certain unfair competition" and Article 40 which deals with "anti-competitive practices". The Agreement on Trade Related Investment Measures (TRIMS) brings investment under international regulation. National policies towards inward foreign investment must be consistent with National Treatment (GATT Article III) and the General Elimination of Quantitative Restrictions (Article XI). In addition, the Agreement on Subsidies and Countervailing Measures (Article XVI) has

been strengthened, although subsidies on exports of primary agricultural products are covered instead by the Agreement on Agriculture where they remain legal, if restricted.

Governments have recourse to the WTO if it is believed that private business practices amongst countries' trading partners are anti-competitive. For example, if a government allows business practices which discriminate against imports, then a case can be made through an appeal to GATT Article XXIII:1(a) which covers violations of Article III (National Treatment), Article XVI (Subsidies and Countervailing Measures) and Article XVII (State Trading) (Hoeckman and Mavroidis 1994, p. 129). In addition, an importing government's behaviour may give rise to a 'non-violation' complaint (Article XXIII:1(b)), if that behaviour nullifies or impairs an existing concession previously granted. Given the special status of agricultural products with respect to subsidies in Article XVI, non-violation complaints could arise under Article XVII which covers, *inter alia*, marketing boards and "any enterprise that has been granted exclusive privileges", including import monopolies. State Trading Enterprises (STE) are permitted but their activities must be consistent with Article III.

The General Agreement on Tariffs and Trade (GATT 1994) has strengthened the operation of Article VI on anti-dumping measures which is fundamental in the context of contestability and competition. It is a widely-held view that anti-dumping activities by governments are, by there very nature, anti-competitive and that Article VI should have been replaced with a more general competition Article. However, as Morgan (1996) has argued forcefully, the Agreement on Implementation of Article VI of the GATT 1994 has strengthened the pro-competitive thrust of the Article and should dampen the criticism of those who regard all anti-dumping decisions as anti-competitive. In particular, she notes the following changes to the implementation of the Article. The first is that there is now less discretion available to national authorities. In the past, this discretion allowed the filing of petitions which had a "chilling effect" on foreign competition, i.e., pointless petitions which were used only to intimidate foreign suppliers into raising their prices in order to avoid anti-dumping duties, rather than because there was any injury incurred by domestic producers. Second, in order to establish whether dumping is occurring, actual cost data have to be used based upon substantial quantities and over an extended period, rather than upon constructed values, as in the past. Third, the use of weighted average

normal values is now prohibited, except in exceptional circumstances, and the comparison of prices has to be either average-to-average or transaction-to-transaction rather than the biased transaction-to-average comparison used previously.

Fourth, national authorities now have to determine the causal link between imports and injury through considering all factors, e.g., competitive factors in both the exporter's and the home market that might be causing injury. Fifth, the definition of "the market" is narrower in Article VI than is generally the case in national competition law. The market is defined here for physically identical products or close similarity of physical characteristics, as compared with the definition in competition law where the market is based upon the degree substitutability of products in consumption. Morgan argues that the narrower definition is intended to discourage the broad imposition of anti-dumping duties, a point of view with which Hoekman and Mavroidis (1996) would disagree. Sixth, the new Agreement has inserted a public interest clause which allows consumers' and industrial users' interests to be taken into account and not just those of producers. Thus, the implementation of Article VI is now more consistent with the *rule-of-reason* approach taken in the implementation of national competition law. Seventh, national authorities are now encouraged to impose the minimum provisional duty consistent with the proven injury and have additional time in which to calculate the size of the "lesser duty". This procedure reflects the public interest approach. And finally, the Antidumping Agreement is subject to the dispute settlement process and this should ensure greater consistency of outcomes and impose additional limits on the discretionary power of national authorities.

Contestability in the agricultural sector is bound in general by the WTO Agreements. However, agriculture has its own Agreement that, together with the Agreement on Sanitary and Phytosanitary Measures, will alter the competitive landscape for this sector. The Agreement on Agriculture contains three areas of restrictions, namely import access, export competition and the level of domestic support. It is acknowledged that the introduction of tariff rate quotas (TRQ) has done little to improve market access and, hence, contestability. The effectiveness of the constraints placed on the use of export subsidies by the required reductions in the volume and value of subsidised exports indirectly may have reduced the scale of overproduction and, in doing so, have improved

the contestability of agricultural markets. Export subsidies in agriculture remain separate from the Agreement on Subsidies and Countervailing Measures The partitioning of instruments of domestic support into amber, blue and green boxes has made decoupling an important principle but has had little real effect on the contestability of the heavily supported sectors (Josling *et al.* 1996, p. 214).

Competition Policies

Competition policies vary considerably across countries, even within the OECD group of countries, and the interpretation of competition laws within any one country varies through time (Graham 1995, p. 107). This variety of laws, interacting with, but being partially responsible for, different market structures, makes any unified analysis of competition policy practically impossible. These variations reflect in part the trade-off chosen by any government between the interests of domestic consumers and producers, and between achieving static and/or dynamic efficiency. Some activities of firms, e.g., their collusion, are usually regarded as illegal, *per se*. Other activities, such as mergers and acquisitions, and horizontal and vertical arrangements amongst firms with economies of scale may not be illegal *per se* but may be subject to a *rule-of-reason* test. The competition authority using such a test has to weigh up whether the potential benefits to consumers of lower prices derived from the economies of scale outweigh the costs and risks to efficiency of increased market concentration and dominance, with the attendant higher prices to consumers. When the firms are domestic and the consumers are foreign, then there is no trade off and governments often opt for tight control in the domestic market together with more anti-competitive behavior of their nations' firms in export markets.

Levinsohn (1996) provides a helpful taxonomy in which he considers three levels of competition policy together with how that policy is implemented in the domestic and the export market. Policies are divided into a) lax or non-existent, b) *rule-of-reason*, and c) strict (illegal *per se*) policies such as applied to collusive behavior in domestic markets. Countries then fall into one of nine categories depending upon which policy is used and whether the policy relates to the domestic or foreign market (see Table 1). Where there is a difference between the application of competition laws in the domestic and export

markets, which he suggests is common even in countries imposing strict control in the domestic market, a laxer stance is taken towards export firms. When this behavior occurs in large economies, e.g., the United States, the European Union and Japan, then the effects of competition policy on trade and welfare in foreign markets becomes an issue of some consequence.

(see Table 1)

It would appear from the examples of competition policies pursued by a number of countries that the *rule-of-reason* approach is the most popular, at least as far as the domestic market is concerned (Table 1). It is notable that most countries pursue a non-strict approach to the activities of their firms in foreign markets even if they have a non-lax policy within their own domestic borders. Hence, any attempt to harmonise competition policies across nations is made more difficult by the inconsistency with which competition laws are applied between domestic and foreign markets. The EU has resolved the problem by retreating to a position of mutual recognition (Leeborn 1996, p. 91).

To illustrate how competition policies interact through international trade, consider first, the case of a large country (F) with a consistently lax competition policy which exports to a large country (H) with a strict competition policy. In the importing country, the competition authority ensures that marginal cost pricing prevails amongst firms which would otherwise behave in an imperfectly competitive way. The basic model is shown in Figure 1 (adapted from Levinsohn). The exporting country has constant marginal costs, c*. The intersection of the exporting country's marginal cost function with the total demand function facing it, D_T equal to the horizontal summation of the ED_H and D_F functions, establishes the equilibrium price, p_w, and quantities produced, consumed and traded.

[see Figure 1]

Next, suppose that there is an agreement between these two countries to harmonise their competition policies and assume that the exporting country agrees to impose a stricter

competition policy while maintaining the equality of the domestic and foreign prices, i.e., it harmonises its competition policy upwards but does not exploit any differences in the price elasticity of demand in the two markets.[3] Suppose that this harmonisation leads in the first instance to a symmetric duopoly in the exporting country. Such weakening of the previously collusive activity lowers the world price to p_w* as each duopolist equates perceived marginal revenue with marginal cost (Figure 2)[4]. The importing country experiences net welfare gains given by the area $p_w abp_w$*, consumers gaining while producers lose. Consumers in the exporting country gain from the fall in price, the area aceb or, equivalently, the area $p_w ghp_w$*, but producer profits fall from $p_w$cdc* to p_w*efc*. The net outcome for the exporting country depends upon the share of profits generated in the export market, i.e., the larger the share, the more likely it is that there will be a net welfare loss because the loss of profits in the export market will exceed the gains to its domestic consumers.

[see Figure 2]

Finally, suppose now that the importing country harmonises its competition policy downwards to one of laxity while the exporting country maintains a lax policy. The outcome may now be a model of duopoly in the importing country with marginal costs in the importing country exceeding those in the exporting country. As a consequence of allowing the industry in the importing country to become more concentrated, output there will fall and exports will rise but not by enough to prevent the equilibrium price from rising. It may be concluded that, in the importing country, profits will rise but consumer surplus will fall, leading to a net welfare loss. In the exporting country, consumers will lose but profits will be higher, leading to the possibility of a net welfare gain, especially if the export market takes a sufficiently large share of output.

---

[3] In keeping with countries in category 3 (see Table 1), the government might have applied a strict pricing policy at home and a lax pricing policy in the export market. This would have generated a model of price discrimination with a higher price in the exporting country's domestic market than in the export market and, hence, a situation of dumping (given the configuration in Figure 1).

[4] The perceived marginal revenue function for symmetric Cournot competition is shown to be a weighted average of the market demand function and the function which is marginal to that demand function

It is sometimes argued in support of lax competition laws in small economies that there is no need for competition policy because free trade will discipline even a domestic monopolist to price at marginal cost. However, there remains the non-traded goods sector. Anti-competitive behavior in this sector through the interaction of firms (e.g. banks) with domestic firms in the traded goods sector, may limit the capacity of foreign firms to compete (Levinsohn 1996, p. 340 and Graham 1995, p. 108). Moreover, the argument rests in part on the assumption that the imported and the domestically-produced goods are at least close substitutes. When goods from these two sources are differentiated, then there are no 'small' countries and domestic firms will have some market power. Therefore, competition policy matters regardless of the size of the economy; it is only a matter of degree.

4. A Framework for the Analysis of Trade and Competition Policy Interactions

In the past, the analysis of trade policies and competition policies have been as separate as their institutional responsibilities. Increasingly, in global markets, trade and competition rules interact. In the same way, the analysis of one becomes inter-related with the other. This section attempts to develop an exploratory framework for considering the interaction of trade and competition policies.

Contestability

It is accepted that the removal of protectionist trade policies is not a sufficient condition to achieve greater economic efficiency. There remain domestic impediments to the contestability of markets that have to be considered. In a world of global firms and economies of scale, it is more appropriate to consider contestability of markets as the criterion, rather than only the absence of border measures. Clearly, in markets where firms experience internal economies of scale, perfect competition and marginal cost pricing do not prevail and the first theorem of welfare economics fails. However, as

---

(Helpman and Krugman 1989). The weight on the true marginal revenue function is $(1/n)$ and that on the demand function is $(1 - 1/n)$, where n is the number of firms.

Baumol *et al.* (1982) have shown, it may be possible in some circumstances to achieve average cost pricing and normal profits even for firms with economies of scale. They characterised a market as contestable if potential entrants to the market can force incumbent firms to price at average cost. To be a potential entrant, a firm must be able to enter and to leave the market easily. However, sunk costs and lack of restraints on the behaviour of incumbent firms will prevent the conditions for contestability from being realised. Governments have a role to play in achieving contestability through defining and enforcing trade and competition policies.

A contestable market is defined in terms of the price, the number of firms and their output. There are three necessary conditions for the existence of equilibrium in a contestable market. First, the market must clear at the lowest price equal to average cost. Given economies of scale, there may be multiple equilibria where price equals average cost, but only the lowest of these prices satisfies the contestable market equilibrium. Second, the equilibrium must be feasible in the sense that no firm is making a loss at the equilibrium market-clearing price. And third, the equilibrium must be sustainable in the sense that no firm can undercut the equilibrium price and make a profit. These conditions, interpreted appropriately, apply to all markets, whether or not open to international trade (Helpman and Krugman 1985).

This theory has been criticised as a useful way of analysing imperfectly competitive markets, particularly because of the assumption of no sunk costs. However, in markets open to international trade, firms that are already operating in other markets may be able to expand into the home market without incurring substantial sunk costs. Hence, the main obstacles to contestability may be the laxity of the home country's competition laws and the presence of border barriers to trade. On the other hand, the impediments facing foreign firms attempting to have a presence in the home market may be substantial, even in the best policy environment. They include: i) constraints which are peculiar to specific products, e.g., technical standards, first entrant advantage created by learning-by-doing, and segments based on consumer loyalty; ii) constraints which arise from local customs, e.g., language, culture and laws; and iii) barriers which occur because of geography so making foreign direct investment a substitute for trade in goods as way of achieving contestability (Graham and Lawrence 1996). In the remainder of the paper only trade

and competition policies will be analysed as impediments to achieving the contestability of markets.

During the 1980s, there were substantial developments in international trade theory. Concepts from industrial organisation were incorporated (see Helpman and Krugman (1985) and Krugman (1989)) and optimal trade policy choices determined for the several different models which were developed (see Helpman and Krugman (1989) for a syntheses of the normative aspects). One important lesson from these developments has been that there are very few general conclusions to be drawn. Results depend upon the assumptions: whether the number of firms is large (monopolistic competition) or small (oligopoly); the nature of the strategic interaction between firms in the small numbers case (e.g., quantity setting, price setting, price or quantity leadership, or collusive (co-operative) behaviour); the timing of government intervention (i.e., whether government announces policy before or after firms make their own decisions); whether firms experience constant or increasing returns to scale; whether goods are homogeneous or differentiated; whether markets are integrated or segmented; and whether or not there is freedom of entry. These developments were obtained in the international trade literature and in the absence of considerations about competition policy. However, the trade and welfare effects of trade taxes and subsidies often can be obtained through equivalent combinations of domestic taxes and subsidies or through domestic regulation. Therefore, trade policy and competition policy may be substitutes in imperfectly competitive markets.

To illustrate the variety of possible outcomes, consider the following four common models. First, consider the differentiated products model with a large number of firms, each experiencing increasing returns to scale, and consumers each with a ‘love of variety’ utility function (see Helpman and Krugman (1985, ch. 6) and Helpman and Krugman (1989, ch. 7) for details). Given the increasing returns to scale, competition policy which is based upon a *rule-of-reason* approach would tend to err on the side of permitting mergers, i.e., the competition authority would allow greater anti-competitive behaviour than it might if constant returns to scale prevailed. Considerations of efficiency would permit each product to be produced by only one firm with zero profits. Hence, a strict

competition policy would reduce efficiency, raise prices and lower welfare, as would a protectionist trade policy. Trade policy and competition policy appear to be independent of each other in this model (Levinsohn, p. 342).

Second, consider the case of domestic oligopoly. A lax competition policy together with increasing returns to scale would allow some domestic firms to expand output and to lower average costs. The sector might then be transformed from an import competing to an exporting sector. A trade barrier would create the same incentives if it were imposed in an environment of lax competition laws. However, import protection in the presence of strict competition policy would not generate this outcome known as import protection as export promotion (see Krugman 1989) because mergers would be prohibited and dynamic efficiency gains would be foregone.

Third, consider again the domestic oligopoly but now assume that the product is homogeneous and that costs are constant. Then it can be shown that if firms compete on quantities (a Cournot game), then economic welfare falls as the industry becomes more concentrated. As the industry becomes more concentrated, the perceived marginal revenue function rotates clockwise towards the true marginal revenue function and, as it does so, output and price move further away from the competitive outcome towards the monopoly equilibrium. In such a model it can shown that firms have no incentive to merge (Levinsohn 1996, p. 340). If the domestic Cournot oligopoly faces increased competition from a foreign oligopoly as trade barriers are reduced, then domestic output will fall, but total sales will rise, to the benefit of domestic consumers. However, if it is now assumed that the product is differentiated and that firms compete on price (a Bertrand game), then mergers are profitable because, with price competition, the reaction curves are upward sloping (products are strategic complements) and trade liberalisation leads to higher prices (Neven and Seabright 1997, p. 384). Hence, competition policy now matters for market structure in the face of trade liberalisation.

In the case of oligopoly with constant returns, a strict competition policy is beneficial to prevent the exploitation of consumers and, conversely, a lax competition policy is harmful to them. If trade taxes were superimposed on the lax competition policy, then

domestic prices would rise and exacerbate the loss of consumer surplus. Now, if competition policy were made stricter but trade policy remained unchanged, then the benefits to consumers would be less than those accruing if trade were free (Levinsohn 1996, p. 341). Levinsohn also argues that if a government were to remove a protectionist trade policy but allow domestic firms to collude in export markets, then the benefits of trade liberalisation would be less than had there been strict competition laws imposed in both markets.

Fourth, consider a domestic industry that can best be described as a dominant firm with a competitive fringe. With this structure, the effects of a liberal trade policy on the likelihood of increased anti-competitive behaviour is as follows. With the entry of foreign firms, which may be competitive or oligopolistic, the price ceiling previously maintained by the competitive fringe at its shutdown price will fall. Hence, firms in the domestic fringe may leave the industry to be replaced by lower cost foreign firms. Then, the structure of those firms, together with their costs relative to those of the domestic dominant firm will determine the new market structure. Overall, it is concluded by Neven and Seabright (1997, p. 393) that there is an additional role for competition policy because the circumstances created by trade liberalisation increase the incentive for predation by foreign firms on domestic ones and vice versa. While the latter may not be of concern to the domestic competition authority, the former will be.

It is difficult to draw up a summary table of results for different market structures because, not only do welfare changes depend upon the structure of the domestic market but also upon the structure of the market of the trading partner. Moreover, in some instances, the type of policy instrument chosen also determines whether or not the trade policy is welfare enhancing. However, some general indications are given about the welfare gains from pursuing particular trade and competition policies under different market structures. In Table 2, some results are presented on the basis of the references cited above.

[see Table 2]

In summary, it has been suggested that competition policies and trade policies may have no interaction or the interaction may be such that they offset each other to some extent. The outcome depends on the nature of the market structure which, itself, is endogenous, depending upon both sets of policies. In particular, it depends upon the presence or absence of increasing returns to scale.

For the agri-food sector, with the exception of the farming sector, some of the oligopoly models perhaps come closest to characterising the market structure. In these models, a slightly protectionist trade policy appears to improve the importing country's welfare in the Cournot case but to lower it in the Bertrand case. A strict competition policy is beneficial if there are constant returns to scale but possibly not beneficial where there are increasing returns to scale. In this latter case, a lax competition policy may be beneficial. In the Bertrand case, a free trade policy reinforces the benefits of a strict competition policy. Given such conflicting results, the appropriate combination of trade and competition policies depends upon the particular circumstances of the industry to which these policies are applied. However, just as it was shown during the 1980s that the benefits of strategic trade policy were conditioned upon special assumptions being satisfied and, as a consequence, that a free trade policy provided a useful rule of thumb, then so too here. As a rule of thumb, free trade together with competition policy based upon a *rule-of-reason* test may be the best environment for the contestability of markets that governments can create.

Considering each of the major components of the agri-food sector in turn, it is apparent that the most appropriate model of industrial organisation differs from component to component as well as the different special issues that arise within them. In the agricultural input industry, it is common to have few firms and to have mergers and acquisitions. This is true for the major industrial inputs such as machinery, fertiliser and seeds. If the more atomistic farm sector is not to be exploited, then competition policy is vital to ensure that these input markets are contestable.

The structure of the farming sector is changing. In some sub-sectors, such as poultry and pigs, farmers are under contract from the suppliers of the basic inputs and perhaps feedingstuff firms. Such vertical linkages may become more common in cereal farming

if firms selling GMOs choose to move in this direction, as may well be the case if terminator genes are used in such bio-engineered seeds. On the output side, farmers again are increasingly under contract to supply given quantities and qualities of product, although this structure also varies from sector to sector. At the present stage of such developments, there may not be a role for domestic competition policy to play in the farm sector.

The marketing and processing sector into which farmers sell is, itself, undergoing change. Here, too, concentration of the industry is increasing, spurred on perhaps by the need to countervail the increasing concentration to be found in the distribution sector. Contestability in this sector presumably depends upon competition laws which may well need an international component.

In the food/distribution sector, where there are many brand names, which might imply that there are many firms, models of monopolistic competition might be the most relevant. However, such a conclusion overlooks the proliferation of differentiated products and brands which are ultimately owned by one firm. There may in fact be rather fewer such firms in national and international markets than meets the eye. Therefore, oligopoly with differentiated products and economies of scale may be the best characterisation in some cases.

Overall, the agri-food sector could be best described as one of oligopoly-oligopsony. At the present time, theories of industrial organisation have not really tackled this structure and, therefore, theory provides no clear direction for the development of the best policy framework within which trade and competition policies should operate.

5. Implications for Trade Negotiations

The discussion of agricultural issues identified several topics in the area of trade policy that should be dealt with as competition issues. The question therefore arises as to where such issues are to be negotiated? Are they within the agricultural agenda, and as such will be treated as part of those talks? Or are they more conveniently dealt with as a part of more general trade policy, with their implications for agriculture in effect a side-issue?

There are precedents for both approaches. In the case of market access, there has been an attempt to bring agricultural products within the scope of trade rules for other sectors. Thus the conversion of non-tariff import barriers to tariffs and the binding of those tariffs essentially brings the agricultural sector into line with the manufacturing sector. On the other hand, the treatment of export subsidies and domestic subsidies are still different for agriculture. The SPS Agreement can also be seen as a sector-specific elaboration of the TBT Agreement.

In the agricultural negotiations the question of State Trading Enterprises will probably be the main "competition" issue to be tackled. Those countries that operate under a regime of private traders and fixed tariffs will no doubt attempt to add some constraints to the regulation of STEs in the next round. The treatment of STEs in the WTO was modified somewhat in the Uruguay Round, with tighter monitoring and reporting requirements. The major challenges are still ahead, as countries get ready to define the agenda for the next phase of negotiations. What are the likely suggestions for improving the consistency of the international treatment of STEs? This will also require some way of monitoring the trade impacts of STEs. Can one estimate the international trade impact of exclusive domestic collection systems and of single-desk sellers? How might these new rules impact on North American parastatals, such as the CWB and the CCC? Will there be any attempt to curb the use of market power in international transactions?

However the other issues mentioned above could play a minor role in the agricultural talks. Of course, the TRQ administration issue will have to be settled. The sensitivity of the banana case may make it difficult to get agreement on a single allocation method. But it is possible that a list of acceptable allocation devices could be agreed which would curb the worst abuses of the system. To the extent that rents are left for the traders there will always be a tendency toward non-competitive behavior.

There has been a tendency to think of agricultural trade problems as being primarily trade issues arising from different and incompatable agricultural policies. Thus improving competition among farmers (attaining a level playing field) was a question of removing export subsidies, gaining market access and regulating domestic payments. But this paper has argued for a broader approach in which the competition policies are considered along

with trade rules and other parts of the agri-food system are taken along with agriculture. Thus concentration in the input supply industry may become as contentious an issue in the future as the support of production agriculture has been in the past.

The setting up of the WTO and the implementation of the Uruguay Round Agreements has moved the international trading system closer to improving the contestability of international markets for goods and services. These Agreements, with the partial exception of Article VI, cover only the behaviour of governments. However, what governments choose to do within their own borders to affect the behaviour of private firms is the subject matter of competition policy. As the international food system becomes more global in its activities and economies of scale internal to the firms within that system begin to dominate, competition within and between national boundaries will become an increasingly important issue of public policy and international debate.

Bibliography

Baumol, W. J., Panzar, J. C. and Willig, R. D. (1982), *Contestable Markets and the Theory of Industry Structure*, New York: Harcourt Brace Jovanovich

Fox, E. M. (1995), Competition Law and the Next Agenda for the WTO, in *OECD New Dimensions of Market Access in a Globalising Economy*, Paris, pp. 169-194

Graham, E. M. (1995), Competition Policy and the New Trade Agenda, in *OECD New Dimensions of Market Access in a Globalising Economy*, Paris, pp. 105-118

Graham, E. M. and Lawrence, R. Z. (1996), Measuring the International Contestability of Markets, *Journal of World Trade* 30(5), pp. 5-20

Hart, M. (1995), What's Next: Negotiating Rules for a Global Economy, in *OECD New Dimensions of Market Access in a Globalising Economy*, Paris, pp. 221- 242

Helpman, E. and Krugman, P. R. (1985), *Market Structure and Foreign Trade*, Cambridge Mass: The MIT Press

Helpman, E. and Krugman, P. R. (1989), *Trade Policy and Market Structure*, Cambridge Mass: The MIT Press

Hoekman, B. M. (1997), Competition Policy and the Global Trading System, *The World Economy* 20(4), pp. 383-406

Hoekman, B. M. and Kostecki, M. M. (1995), *The Political Economy of the World Trading System: from GATT to WTO*, New York: Oxford University Press

Hoekman, B. M. and Mavroides, P. C. (1994), Competition, Competition Policy and the GATT, *The World Economy* 17, pp. 121-150

Hoekman, B. M. and Mavroidis, P. C. (1996), Dumping, Antidumping and Antitrust, *Journal of World Trade* 30(1), pp. 27-52

Krugman, P. K. (1989), Industrial Organization and International Trade in Schmalensee, R. and Willig, R. D. (eds) *Handbook of Industrial Organization* Volume II, New York : North-Holland

Josling, T. E., Tangermann, S. and Warley, T. K. (1996), *Agriculture and the GATT*, New York: St Martin's Press Inc.

Leeborn, D. W. (1996), Lying Down with Procrustes: An Analysis of Harmonization Claims, in Bhagwati, J. and Hudec, R. E. (eds) *Fair Trade and Harmonization* Vol. 1, Cambridge Mass: The MIT Press, pp. 41-117

Levinsohn, J. (1996), Competition Policy and International Trade, in Bhagwati, J. and Hudec, R. E. (eds) *Fair Trade and Harmonization* Vol. 1, Cambridge Mass: The MIT Press, pp. 329-356

Lloyd, P. J. and Sampson, G. (1995), Competition and Trade Policy: Identifying the Issues After the Uruguay Round, *The World Economy* 18(5), pp. 681-705

Morgan, C. (1996), Competition Policy and Anti-Dumping: Is it Time for a Reality Check?, *Journal of World Trade* 30(5), pp. 61-88

Neven, D. and Seabright, P. (1997), Trade LIberalization and Coordination of Competition Policy, in Waverman, L., Comanor, W. S. and Goto, A. (eds), *Competition Policy in the Global Economy*, London: Routledge

OECD (1995), *New Dimensions of Market Access in a Globalising Economy*, Paris

Petersmann, E-U. (1996), *The Need for Integrating Trade and Competition Rules in the WTO World Trade and Legal System*, PSIO Occasional Paper WTO Series No. 3, The Graduate Institute of International Studies, Geneva

Tharakan, P. K. M.. and Lloyd, P. J. (1998), Competition Policy in a Changing Economic Environment: An Overview, *The World Economy* 21(8), pp. 997-1002

Trebilcock, M. J. (1996), Competition Policy and Trade Policy: Mediating the Interface, *Journal of World Trade* 30(4), pp. 71-106

Waverman, L., Comanor, W. S. and Goto, A. (eds) (1997), *Competition Policy in the Global Economy*, London: Routledge

Wood, D. P. (1996), *International Standards for Competition Law: An Idea Whose Time Has Not Yet Come*, PSIO Occasional Paper WTO Series No. 2, The Graduate Institute of International Studies, Geneva

Zampetti, A. B. and Sauvé, P. (1995), New Dimensions of Market Access: An Overview, in *OECD New Dimensions of Market Access in a Globalising Economy*, Paris, pp. 13-22

Table 1: Categories of Competition Policy

	Domestic			
Foreign		Lax	Rule of Reason	Strict
	Lax	Hong Kong UK Taiwan Denmark Italy	Ireland Germany Japan Canada Switzerland	US
	Rule of Reason		France Netherlands Sweden EU	
	Strict			

Source: Adapted from Levinsohn (1996).

Table 2: Impact on Social Welfare of Different Combinations of Market Structure and Trade and Competition Policy

Domestic Market Structure	Active Trade Policy		Competition Policy			
			Domestic		Export	
	Import	Export	Lax	Strict	Lax	Strict
Perfect competition: large country	**+**	**+**	**na**	**na**	**na**	**na**
Monopolistic Competition	**?**		**+**	–		
Oligopoly:[a]						
Cournot CRS	**+**	**+**	–	**+**	**+**	**-**
Bertrand CRS	–	**+**	–	**+**	**+**	**-**
Cournot IRS	**+**	**+**	**+**	–	**+**	**-**
Bertrand IRS	–	**+**	**?**	**?**		
Monopoly	–	**+**	–	**+**		

Note: *a*) The nature of the export policy depends upon additional assumptions. For example, in a quantity game, an export subsidy may be optimal, whereas under the same assumptions but with price as the strategic variable, an export tax is optimal.

Figure 1

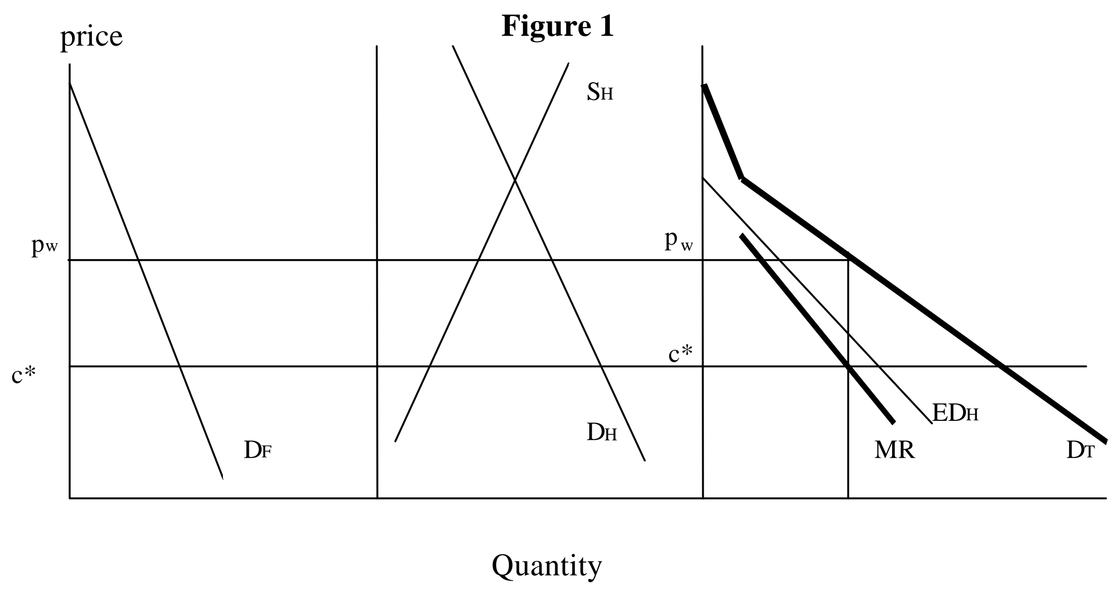

Figure 2