For Official Use **COM/AGR/CA/TD/TC/WS(98)106**

Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

OLIS : 09-Oct-1998
Dist. : 13-Oct-1998

English text only

DIRECTORATE FOR FOOD, AGRICULTURE AND FISHERIES
TRADE DIRECTORATE

OECD Workshop on Emerging Trade Issues in Agriculture

COMPETITION POLICY AND AGRICULTURAL TRADE

This paper has been prepared by Philip Abbott of Purdue University , United States, for Session IIIc of the OECD Workshop on Emerging Trade Issues in Agriculture to be held in Paris on 26-27 October 1998. It represents the views of its author only and not those of the OECD or its Member governments.

70308

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

COM/AGR/CA/TD/TC/WS(98)106
For Official Use

English text only

COMPETITION POLICY AND AGRICULTURAL TRADE

Philip Abbott[*]

1. Introduction

1. Several seemingly disparate issues have motivated this session on competition policy and agricultural trade. They include state trading, labels of origin and the relationships between trade, foreign direct investment and global competitiveness. Each of these issues raises concerns related to a broader question on whether the next round of GATT negotiations should address competition policy as well as how agricultural trade issues may impact those negotiations.

2. State trading occurs when a public or quasi-public agency either physically handles trade of a commodity or controls the essential terms of trade through its regulatory powers (Kostecki). While several countries have reformed or eliminated state trading agencies under structural adjustment programmes (the US raised elimination of state trading as a goal of the Uruguay Round), the most recent GATT agreement does not eliminate it but requires more stringent reporting of the existence and activities of these organisations (Abbott and Young; Ackerman, Dixit and Simone; Dixit and Josling). State traders are expected to abide by the same disciplines that GATT imposes on private entities. Concerns with the behaviour of state trading agencies, notably possible price discrimination by the Canadian Wheat Board, unequal treatment of exporters by importing boards, and the possibility that countries may through state trading fail to comply with their commitments under GATT, has resulted in the elimination of these agencies to arise as a potential issue in the next round of GATT negotiations (Rominger).

3. Labels of origin are a common and expanding marketing tool in Europe and which are maintained by government regulation. Product names and the specifications of those products are subject to strict requirements and denote the location of origin of the product. These labels enhance product differentiation, allowing premiums to accrue to products from more desirable locations and so permit a degree of market power to be exercised by several smaller firms or producers in a distinct region (Solana-Rosillo and Abbott). These regulations accomplish much the same ends as branding in the US, except that they must be maintained by government regulation and so may permit several smaller firms to enjoy the same marketing advantages as larger firms.

4. Global competitiveness has arisen as a concern of many governments who have been under pressure to subsidise exports in order to enhance the competitiveness of a country's firms in the face of increasing global competition (Porter; Abbott and Bredahl). While direct agricultural export subsidies are forbidden by the Uruguay Round GATT agreement, various indirect subsidies may persist, especially in processing and distribution. Moreover, as agribusiness firms seek to go global, strategies more often involve foreign direct investment (FDI) than trade (Handy and McDonald; Henderson, Handy and Neff). The literature finds that in some instances trade and investment are complementary internationalisation modes, whereas in other cases they compete as alternatives -- generalisations have been difficult to establish here (Connor; Handy and Henderson). While foreign direct investment can lead to greater competition in a sector by adding a foreign firm who competes with domestic firms, FDI by merger or

[*] Visiting Professor, School of Business Administration, Al Akhawayn University, Ifrane, Morocco. On sabbatical leave as Professor, Department of Agricultural Economics, Krannert Building, Purdue University, West Lafayette, Indiana, 47907-1145, USA.

acquisition can lead to less competition in a sector, reducing the number of firms in an industry. The exercise of market power is seen as an important force determining the motivations behind FDI, and the trade-offs between FDI and trade as alternative means of entering foreign markets.

5. The unifying theme behind each of these issues is that these institutions can enable or increase the market power of firms. In the case of state trading, market power is wielded by a public institution. For labels of origin, government regulation can create market power for small firms in a region who would not otherwise enjoy the benefits of market power. In the case of FDI, mergers and acquisitions across borders can lead to greater market power of the merged firm, limiting competition in the target market.

6. In the context of a closed or domestic economy, competition policy exists to ensure that excessive market power is not exercised by one or a few large firms in a sector. It is applied directly as multi-national firms seek to enter foreign markets, though on a country-by-country basis so that its implementation may not be consistently applied in all markets served by a firm. State trading agencies are generally exempted from such regulation due to their status as public agencies. Encouraging labels of origin seemingly goes counter to the objectives of competition policy, but seldom creates entities with sufficient size to be subject to anti-trust enforcement.

7. That these institutions alter the degree of competition in countries, and given the accelerating degree of mergers and acquisitions as well as the recognition of the increasing importance of FDI relative to trade as a vehicle for penetrating foreign markets, a number of questions have arisen concerning competition policy and GATT, and specifically in agriculture and agribusiness sectors. One central question facing the next round of negotiations is: can or should GATT and the WTO limit the exercise of market power and so enforce competition policy on an international basis to the benefit of the international trading system? That is, just as GATT as led to increased trade and reduction of protectionism through trade liberalisation, should it also now be concerned with increasing foreign direct investment by insuring greater global competition? A related question is: is a somewhat uniform international competition policy necessary? Is it desirable? Or might competition policy function in a manner similar to the way in which GATT and the WTO are seeking to harmonise health, sanitary and phyto-sanitary regulations affecting agricultural trade? In other words, might a model of competition policy be established in GATT while individual countries are permitted to modify that model to meet national concerns and objectives? Another issue is whether agricultural stabilisation policy reform as mandated under the Uruguay Round GATT agreement (and, more importantly, as implemented by countries) will lead to greater competition in domestic markets or will it in some instances permit greater market power to be exercised? A related question is whether agricultural stabilisation policy, especially post-Uruguay Round, and competition policy are complementary or in conflict? If agricultural policy and competition policy are in conflict, are exemptions to competition policy appropriate, as is now given to state traders?

2. Tensions between Competition Policy and Agricultural Stabilisation Policy

8. Tensions which potentially exist between agricultural policy and competition policy must be highlighted immediately, both on theoretical and practical levels, as a background for discussion of possible answers to these questions. First, agricultural policy is often motivated to achieve domestic non-economic objectives, especially redistribution of income or wealth towards special interests (Young, Marchant and McCalla). Hence, prices, income and profits are raised by policy for those particular special interests. This is counter to the objectives of competition policy, which through limitation of market power prevents special interests from taking advantage of their position and so it lowers income of special interests. Thus, competition policy is motivated by maximising general not special interests. If

agricultural policy objectives persist post-GATT, as certainly must be the case given limited reforms in actual Uruguay Round commitments, these domestic objectives are likely to continue to take precedence over the objectives of competition policy. Hence, exemptions are likely to continue. After all, the justification for much of agricultural policy is that low incomes of particular (producer) groups are to be raised, not limited.

9. Secondly, institutions which have been created to implement agricultural policy frequently bestow market power on certain economic actors (Sorenson; Dixit and Josling). In the case of state trading, a public goods justification may be invoked. Moreover, it is in the national interest of a country to exercise that market power and that market power may make achieving national objectives less costly. This is clearly the case for the Canadian Wheat Board [although an internal debate does exist on how effective this agency truly is (Carter and Lyons; Smith and Goodwin; Kraft, Furtan and Tyrchiewicz; Schmitz, Gray, Schmitz and Storey)]. If the Board can act as a Stackelberg leader setting world market prices, it can exercise the greatest degree of market power available and pass those benefits on to Canadian producers in the form of higher prices. Price discrimination also permits greater benefits to this special interest group (wheat farmers) through more effective exercise of market power. It is doubtful that several firms could price discriminate as effectively as the CWB is accused of. It should be noted, however, that through various institutional alternatives, the US Foreign Agricultural Service and the EU Commission have also been able to price discriminate; whether these are state traders is uncertain under the definitional debate which persists on that issue. The US has at times notified the WTO that FAS is a state trader and at times revoked that notification, while the EU insists that its activities do not fall under the purview and GATT requirements of state trading (Dixit and Josling). Their commonality is that institutions which implement agricultural policy may have market power in international markets. Moreover, state trading is not the only institutional means to exercise market power - simple application of a tariff or export tax can suffice.

10. There may also be a spillover whereby market power is bestowed on firms due to implementation of domestic agricultural policies. This is likely to occur under quotas and quota-like non-tariff barriers which fix import quantities. Quantity limitations must be extended to processing activities to ensure that import limitations are effective in raising sectoral prices and that processed food imports are not used to circumvent quota limitations. Placing quotas on cheese to help protect the dairy sector is a classic example. A problem is that in the absence of quotas, imports of the processed food may lower primary product prices, thereby defeating the policy objective, but will also potentially increase value-added in the domestic economy and ensure greater competition in the processing industry. Rules of origin, which constitute the bulk of the text in the NAFTA Agreement, are also necessary because of relationships between processed product and commodity trade. They also prevent processed product imports from circumventing agreement requirements in support of domestic agricultural policy.

11. Conflicts may also exist between the objectives of agricultural policy and the optimal exercise of market power. The prevalence of agricultural export subsidies is a good illustration of this (Paarlberg and Abbott; Abbott, Paarlberg and Sharples). If a country truly has market power in a sector, its optimal international policy is an export tax not an export subsidy. An export tax raises world prices by limiting supply, to the benefit of large exporters. Price discrimination via export subsidies is effective as an export tax to the extent that it lowers prices to the more elastic (price responsive importers) and so raises prices elsewhere. The problem with export taxes is that domestic market producers suffer -- and they are the intended beneficiaries of agricultural policy. Practice suggests that domestic redistributional objectives dominate the exercise of market power in agricultural policy formulation (Abbott and Kallio; Johnson, Mahe and Roe). Given the motivations for institutions as vehicles to implement domestic policy, countries are reluctant to give up these institutions -- hence the persistence of state trading.

3. Are Free Trade and Perfect Competition Optimal Policy?

12. Trade liberalisation under GATT and WTO are premised on the notion that there are mutual benefits to free trade between countries (OECD). The interest in agricultural policy reform and effective competition policy are based largely on this notion. There are, however, several theoretical arguments from New Trade Theory, and even earlier from the Theory of Second Best, which find exception to this notion (Karp, Krishna and Thursby). It is the application of these theories which lies behind the debates on issues central to this session -- state trading, labels of origin and global competitiveness.

13. Optimal export taxes and optimal import tariffs have long been recognised as trade interventions which increase the welfare of the country applying the intervention at the expense of the rest of the world. While liberalisation enhances world welfare, the reformer suffers and so may be reluctant under GATT to give up these policies. The New Trade Theory reveals institutions where imperfect competition implies that export taxes, tariffs and even subsidies may be preferable to free trade (Krugman; Helpman and Krugman). The nature of market institutions, and especially how firms compete, is critical to what theory reveals as optimal policy. Typically, imperfect competition is linked with economies of scale -- the motivation behind some FDI, particularly mergers and acquisitions -- or product differentiation -- the goal of labels of origin.

14. Theory does not by itself give general insight into the optimal mix of competition policy and agricultural policy. The lessons from New Trade Theory (and New Industrial Organisation Theory -- Tirole) are that institutional arrangements in markets determine optimal policy and even the direction of that policy may not be established *a priori* by theory. Empirical work on a case-by-case basis is needed to assess trade-offs, such as those between benefits to the exercise of market power versus the realisation of agricultural policy objectives, or between gains from economies of scale versus losses due to reduced competition.

15. The theory of second best is an appropriate paradigm for assessing agricultural and competition policy. Its application necessitates careful empirical work. Under this framework market power is recognised as one of several distortions policy may exist to correct. Competition policy exists explicitly to correct such distortions -- specifically market power and anti-competitive business practices. Non-economic objectives are additional distortions motivating policy interventions which interact with market power and which are the key rationale behind much of agricultural policy. In that case, redistribution toward producers is considered a non-economic objective since it dominates the normal economic objective of consumer welfare maximisation. Where market power distortions are international, policy may be optimal which captures rather than eliminates that market power. Free trade may also exacerbate rather than eliminate other distortions, as seen in some of the new issues linked to trade policy, environmental concerns and food safety issues.

16. These theoretical concerns have given rise to a new approach to competition policy -- the Total Welfare Approach (OECD). Traditionally, competition policy could be applied based on the size of the firm involved, under the presumption that size leads to market power, which was considered as always being negative for an economy. It is recognised under the new theories that efficiency gains from economies of scale may outweigh the cost of market power exercised by a large firm and it may be the case that limiting other practices of firms can insure adequate competition.

4. What do we know about Market power and Agricultural Trade?

17. In considering research priorities related to competition policy and future agricultural trade, it is useful to assess the status of the literature examining the extent and consequences of imperfect competition in agricultural markets. Examination of imperfect competition has been an important topic in agricultural trade research for several decades and several modelling approaches have been developed to examine both redistributional impacts and rents due to policy (McCalla; Alaouze, Sturgess and Watson; Paarlberg and Abbott; Karp and McCalla; Kolstad and Burris; Thursby and Thursby; Kennedy, von Witzke and Roe; Abbott and Kallio). Most of this research has focused on grain markets, especially wheat, with limited evidence for state trading in coconut oil (Karp and Perloff). This literature generally assumes rather than tests whether market power exists, though some studies have measured the extent of market power. The pricing to market study by Pick and Park, a phenomenon closely allied to imperfect competition and the exercise of market power, finds this behaviour only in those commodity markets which have been extensively studied (principally wheat) suggesting both that market power is found in only a few agricultural commodity markets and that research has been reasonably well focused on the right commodities.

18. Typically, where market power is believed to exist in commodity markets, state trading institutions or other trade interventions exists and are required for that power to be exercised. Few, if any, natural monopolies exist. Exporters of wheat often have market boards or institutions which share similar attributes, and certain importers (notably the USSR, Japan and China) may exercise market power (Carter and Schmitz). While the popular press has argued that the large firms engaging in international grain trade may also be imperfectly competitive (Morgan), the academic literature (Caves and Pugel) tends to refute that claim. With a unique firm level data set, Patterson and Abbott found significant statistical evidence of price discrimination, hence market power, by US grain exporters, but the size of the margins accruing to firms was quantitatively insignificant.

19. Several general conclusions emerge. Market power in international trade is seldom vested in firms. Intervention and public institutions are required for potential market power to be exercised. State trading is a common means, but other institutional forms can achieve the same ends. Domestic policy objectives can be in conflict with and dominate market power as a *raison d'être* for trade interventions. These interventions survived the last GATT round because they were important to the implementation of agricultural policy goals and domestic policy institutions which also survived the Uruguay Round. Price discrimination appears to be one of the more important mechanisms through which market power may be exercised and that may be easier to implement under a marketing board not required to reveal transactions information.

20. Another vehicle through which international market power may be exercised is the cartel, or commodity agreement. These, like state trading agencies, are publicly created institutions whose goals include both the exercise of market power and producer support, potentially conflicting objectives in light of the cartels need to share markets while reducing exports. This sharing requirement has been the undoing of many commodity agreements which have generally not been successful over the longer term at raising commodity prices.

21. For food processing and distribution, the situation appears to be quite different (Henderson, Sheldon and Pick). There exists substantial literature by agricultural marketing economists demonstrating the importance of market power, at least in domestic markets, as well as the need for competition policy to be applied to agribusiness firms who have abused that market power (Marion; Connor, Rogers, Marion and Mueller). Evidence is much less clear that extension of firms across borders *per se* enhances market power, suggesting that this issue may best be examined on a market-by-market, hence country-by-country,

basis. Since trade in processed and high value agricultural products is increasing rapidly, and accounts even in the US for the majority of value in agricultural exports, a better understanding is needed of why market power seems so important in processed food markets and distribution, whereas agricultural commodities are still held as the best example of competitive markets.

22. The extent of economies of scale may well be behind the differences between commodities and processed foods. The agricultural development literature and the work of the FSU (Brooks and Nash) have generally indicated that economies of scale do not justify large farming enterprises. Evidence from the industrialisation of agriculture indicates that for animal production, economies of scale may be important but not to the degree that extensive market power on a national level will exist -- several plants will generally be required to service a typical developed country market. The same arguments may apply for processing -- that economies of scale are not so large as to justify only a couple of plants in a given developed country.

23. While the extent of economies of scale in processing probably merits further investigation, an even less well understood question is the extent and importance of economies of scale in marketing and distribution. Product differentiation is also most relevant at this link of the marketing chain and these together may well account for why market power appears so prevalent to agricultural marketing economists. Issues of marketing and distribution have been largely ignored in international trade literature, even though production costs can be small portions of import unit values and retail prices, and marketing institutions can evolve to enhance market power. Many of the agribusiness cases cited as justifying the need to address competition policy are at the marketing and distribution level, not production level (OECD; Solana and Abbott).

24. In another context, it is useful to remember that one finding of the trade liberalisation literature is that protection can often maintain domestic monopolies which would not exist under free trade. Rationalisation of domestic industries in the face of international competition is seen as one important mechanism leading to dynamic gains substantially greater than the static welfare triangles found as the traditional benefits to free trade (Harris and Cox). Following this argument, we would expect trade liberalisation to be more often complementary to and reinforcing competition policy. It is difficult to imagine why a true freeing of one's borders to trade would reduce competition and the fact that firms more often enter markets via FDI rather than trade suggests that if market power is to be exercised, that may be a more effective vehicle.

25. Trade liberalisation may not lead to greater competition when there is not true liberalisation. Two examples from agricultural trade come to mind. When state trading agencies were eliminated under structural adjustment reforms, they were in some cases replaced by a private monopoly rather than a competitive trading sector. In that case, a monopoly would not be mandated to achieve social objectives, and the possibility therefore of abuse of market power becomes greater than under state trading. (Empirical evidence is not clear on how extensive this has been -- Abbott and Young). In the implementation of the Uruguay Round Agreement, many countries maintained high tariffs (dirty tariffication - Ingco and Hathaway) which could be prohibitive or were permitted to adopt a tariff rate quota -- which can function more like a quota than a tariff (Abbott and Paarlberg). In the cases of US sugar and dairy imports, TRQs permit imports and defend prices comparable to those found before 1994 and quotas were required on processed products (e.g., cheese to maintain effectiveness of the quota limitations). In each of theses cases, the spirit and intent of the liberalisation objectives has been violated.

5. Evidence on Specific Session Issues

26. Research on the specific issues motivating this session -- state trading, labels of origin, and competitiveness -- provide insight into the problems with and prospects for integrating competition policy into any new GATT agreement concerning agriculture.

27. State trading is recognised as a means to create market power. State traders have exercised that power via protectionism by importers, price discrimination by exporters and by export taxation, or more likely its equivalent, export reduction via stockholding, and surplus disposal schemes. Nevertheless, empirical evidence does not show significantly different protection by state traders, either across countries with and without these entities or in single countries before and after reform of state trading agencies (Abbott and Young). While the evidence is weak, the most likely outcome of reform is the elimination of certain anti-competitive commercial practices competition policy would seek to eliminate, including favouring particular trading partners for political reasons. This is likely because state trading agencies, as public institutions, are mandated to achieve domestic policy goals first. When the exercise of market power and these goals are in direct conflict, and application of export taxes versus subsidies is a clear case where this conflict arises, domestic policy objectives take precedence. When these agencies are reformed, little may change other than the institutional means to achieve those domestic policy goals and alternative institutional arrangements can generally be found, though with political transactions costs to be implemented. This perspective suggests state traders are much like public utilities: while they may exercise market power and may violate restrictions on commercial practices competition policy seeks to impose, their role as public institutions and their mandate to implement domestic policy leads to both exemption from competition policy disciplines and a great reluctance to reform these institutions. Hence, both their elimination and the application of competition policies on state traders will face stiff opposition in GATT negotiations. The greater danger is that elimination of these agencies in the absence of competition policy will lead to their replacement by private monopolies, as has happened in some cases of privatisation under structural adjustment reforms.

28. Labels of origin constitute another means by which the state can create market power. They function much like branding in differentiating products from a region, except that it permits differentiation by many smaller firms which by themselves would not be able to establish a brand or exercise any degree of market power over a differentiated product. Regulations limiting the use of the label and the establishment of the applicable criterion act as restrictions on output which bestow market power and raise prices. Since larger firms could establish brands without this institution, it is unlikely that it will apply in cases where the limits of competition policy application will be reached. Its reason for application is to make smaller firms in specific regions more competitive, raising the same issues that the competitiveness debate as applied to this issue raises. That is, when are market power and product differentiation appropriate vehicles to enhance competitiveness of firms, and so is market power not always bad domestic policy? This is a clear example when the response by European countries has been that some degree of market power is acceptable, even desirable, to the point of being established through public regulation.

29. The debate of international competitiveness, and even the disparities in definitions of this term across disciplines, highlights these same concerns over the treatment and desirability of the exercise of market power. If competitiveness is defined at a national level, application of the theory of second best generally presumes that elimination of market power is optimal policy. On the firm level, and from a business strategy level, firm competitiveness is enhanced when product differentiation and other practices permit a greater exercise of market power by the firm. The New Trade Theory (Krugman) as well as New Industrial Organisation Theory (Tirole) suggest that in the face of significant economies of scale, these practices can be welfare-enhancing even at the national level.

30. Theses issues also highlight inconsistencies with the standard treatment of supply in economic analysis which has led to market access as a key concern in the last GATT Round. Some economists argue that cost curves may never turn upward, so economies of scale to some degree almost always apply (though this observation is gleaned from manufacturing production more so than agricultural production - Cyert and March; Earl). Moreover, product differentiation is focused on demand creation thereby contradicting our assumption that a firm can sell whatever it can produce at a marginal cost equal to the going market price. In the last GATT Round, many were concerned with market access as much as, or even to a greater extent, than the effects of tariffs on pricing. Profits could be realised even at existing high tariff rates if policy did not prohibit (or limit) entry into a market. This perspective is consistent with the GATT preference for tariffs over quotas as well as with the notion that competitiveness is achieved through marketing initiatives and penetration of the distribution network more so than through reduction of production costs (Abbott). Therefore, while FDI may be the more important vehicle through which firms go abroad, it may be via marketing subsidiaries rather than production facilities. Application of competition policy should focus on this link in the marketing chain where greater evidence of excessive power and the need for application of competition policy has been found.

6. Competition Policy and GATT Reform

31. A concern motivating this session is that agricultural policy reform following the Uruguay Round agreement will lead to less competitive practices in international markets and hence a need for greater application of competition policy in agriculture. It would seem, however, that if the principles of the Agreement on Agriculture had been adhered to and producer support converted to decoupled measures, this would not be a concern (IATRC). If agricultural policy functions in the form of income subsidies, and not through market intervention mechanisms, it should not give rise to market power. Hence, there should neither be a special need for competition policy after GATT reforms nor exemption from competition policy disciplines given to application of agricultural policy. Neither is consistent with the spirit of the Uruguay Round outcome.

32. The reality of actual reforms contained in individual country offers and the means by which the agreement is implemented differs somewhat from the ideal envisioned by the Uruguay Round Agreement on Agriculture. State trading was permitted to continue and so public agencies exempt from competition policy continue to exist in this area. Dirty tariffication (the very limited actual reduction of agricultural tariffs following the Uruguay Round) also means that a considerable degree of protectionism continues. While one of the goals was to replace quotas and non-tariff barriers with tariffs (Tariffication), the Tariff Rate Quota (TRQ) may function more like a quota than a tariff and food safety and environmental concerns raise the possibility of increasing, not decreasing, NTBs. Enforcement of market access commitments is elusive in the context of these issues. Thus, the institutional mechanisms coming from the Uruguay Round have not produced the changes envisioned and which would reduce concerns with anti-competitive commercial practices.

33. The emphasis on market access in the Uruguay Round also highlights the importance of marketing and distribution -- many private sector interests were much more concerned with the elimination of NTBs than the actual level of the tariff which they felt they could overcome with an effective marketing strategy. Production costs were only a secondary concern.

7. Conclusions and Future Research Implications

34. Extension of the GATT Agreement to encompass competition policy as another means to realise the gains from freer trade is new ground not previously addressed in GATT, but a logical extension given the importance of FDI rather than trade as a vehicle for penetrating international markets, as well as the increasing importance of high value and processed food trade relative to commodity trade.

35. Trade issues overlap marketing and distribution concerns where evidence of the exercise of market power is greater and where the application of competition policy is more likely to be a relevant concern. This is where evidence of the exercise of market power in the agricultural production and distribution chain has been found to be the greatest. While the industrialisation of agriculture may in time increase the importance of economies of scale and product differentiation to agricultural production, at this point evidence seems to suggest that this is not where private sector market power lies. Nor are economies of scale at the processing level believed now to be important and thus a factor pointing to the need for competition policy. These presumptions, however, should be challenged by research and future changes watched carefully.

36. State agencies and regulation in this domain are also important means by which market power is created. Nevertheless, although exemptions given to these institutions seem at the moment justified (at least to the countries using this institution) by domestic agricultural policy goals, it permits behaviour inconsistent with competition policy goals for international markets. Given the importance of institutions like state trading as a means to implement agricultural policy, it is not likely to be easily reformed.

37. The empirical literature on which the above conclusions are drawn is limited. More progress has been made on underlying theory than in supporting empirical work. New Trade Theory and New Industrial Organisation theory offer rich paradigms in which the theoretical implications of the consequences of these issues can be understood. Lessons from that literature depend strongly on market institutional relationships and few generalisations are possible, even on the desirability of free trade. The Total Welfare Approach to the application of anti-trust legislation reflects the lessons of this theory and recognises the need to assess the costs of the exercise of market power against the benefits from economies of scale, and probably product differentiation as well. Empirical research on these issues will need to proceed on a case-by-case basis, with much work devoted to understanding market institutions in each case.

38. Data limitations, especially at the firm level, have hampered research on the key issues raised. The OECD should continue to play its role in making data available on an international basis and, to the extent possible, go beyond current efforts in reporting general trade data to include information relevant to the application of competition policy and to firm-level data. This will be limited, however, to the extent that such data is available on a national basis.

39. The extent of economies of scale in agricultural production, processing, distribution and marketing probably deserves review and future examination as markets evolve and technical change occurs. The interaction of this with product differentiation and the importance of these in determining the trade-offs between trade and FDI needs to be better understood. The role of marketing and distribution, especially as it relates to the exercise of market power across borders, and the FDI incentives should receive priority attention. These questions have been neglected in earlier research on international agricultural trade, in spite of some recent efforts to bring marketing and trade perspectives together.

40. Given the forces behind global competition, the need for competition policy on a country-by-country basis is clear. Whether there are advantages to international competition policy co-ordination is

not yet well understood, so the incorporation of this into the next GATT Round should remain controversial.

REFERENCES

Abbott, P.C. *Competitiveness: Theoretical Foundations versus Empirical Observation*, paper prepared for the EAAE/ISHS Seminar on “Understanding Competitiveness: Economic Theory and its Contribution to a Better Understanding of Competitiveness,” Apeldorn, The Netherlands, 21-23 April, 1998.

Abbott, P.C. and M.E. Bredahl. 1994, "Competitiveness: Definitions, Useful Concepts and Issues" in *Competitiveness in International Food Markets*, M. Bredahl, P. Abbott and M. Reed, editors, Westview Press, Boulder, Colorado.

Abbott, P. C., and P.K.S. Kallio, “Implications of Game Theory for International Agricultural Trade” in *American Journal of Agricultural Economics*, N° 78(August 1996), pp. 738-744.

Abbott, P.C., and P.L. Paarlberg, *Tariff Rate Quotas: Structural and Stability Impacts*”, Staff Paper, Purdue Department of Agricultural Economics. (Forthcoming in *Agricultural Economics*), 1997.

Abbott, P.C., P.L. Paarlberg, and J.A. Sharples, “Targeted Export Subsidies and Social Welfare” in *American Journal of Agricultural Economics*, N°69 (November 1987), pp. 723-732.

Abbott, P.C. and L.M. Young, *Wheat Importing State Trading Enterprises: Impacts on World Wheat Markets*” presented at the IATRC Annual Meeting, San Diego, CA, December 1997

Ackerman, K., P. Dixit, and M. Simone, “State Trading Enterprises: Their Role in World Markets”in *Agricultural Outlook*, ERS, USDA, June 1994, pp. 11-16.

Alouze, C.M., A.S. Watson, and N.H. Sturgess, “Oligopoly Pricing in the World Wheat Market” in *American Journal of Agricultural Economics*, N°60 (May 1978):173-185.

Brander, J.A., and B. J. Spencer, “Export Subsidies and International Market Share Rivalry.” *Journal of International Economy*, N°18 (February 1985), pp. 83-100.

Brooks, K. and J. Nash, “The Rural Sector in Transition Economies,” forthcoming in *Handbook of Agricultural Economics*, G. Rausser and B. Gardner, ed., North Holland, Amsterdam, 1998.

Carter, C.A., and R.M.A. Lyons, *The Economics of Single Desk Selling of Western Canadian Grain*,” Alberta Agriculture, Food and Rural Development, Edmonton, Alberta, 1996.

Carter, C.A., and A. Schmitz. “Import Tariffs and Price Formation in the World Wheat Market.” *American Journal of Agricultural Economics*, N°61 (August 1979), pp. 517-522.

Caves, R.E., and T.E. Pugel. “New Evidence on Competition in the Grain Trade”, *Food Res. Inst. Stud.* N°18 (1982), pp. 261-74.

Connor, J. M. "Determinants of Foreign Direct Investment by Food and Tobacco Manufacturers." *American Journal of Agricultural Economics* (1983)65:395-404.

Connor, J.M., R.T. Rogers, B.W. Marion, and W.F. Mueller, *The Food Manufacturing Industries: Structures, Strategies, Performance, and Policies*, Lexington, Lexington, MA, 1985.

Cyert, R. and JG March. *A Behavioral Theory of Firms*, Prentice Hall, Englewood Cliffs, NJ, 1963.

Dixit, P., and T. Josling. “State Trading in Agriculture: An Analytical Framework” in *International Agricultural Trade Research Consortium Working Paper 97–4*, July 1997.

Earl, P.E. “Epilogue: Whatever Happened to PWS Andrew’s Industrial Economics?” The Economics of the Competitive Enterprise, F. Lee and P earl eds. Edward Elgar Press, Hauts, England, 1993.

Handy, C.R. and D.R. Henderson, "Assessing the Role of Foreign Direct Investment in the Food Manufacturing Industry" in *Competitiveness in International Food Markets,* M.E. Bredahl, P.C. Abbott, M.R. Reed (editors), Westview Press, Boulder, CO, 1994.

Handy, C.R. and J.M. McDonald, “Multinational Structures and Strategies of US Food Firms” in *American Journal of Agricultural Economics* (1989)71, pp. 1247-1254.

Helpman, E., and P.R. Krugman. *Trade Policy and Market Structur.* MIT Press, Cambridge, MA, 1989.

Henderson, DR, CR Handy and SA Neff. *Globalization of the Processed Foods Market*, AER No. 742, ERS, USDA, Washington, DC, 1996.

Henderson, D.R., I.M. Sheldon and D.H. Pick, *International Commerce in Processed Foods: Patterns and Curiosities*, IATRC Working Paper # 96-3, Department of Applied Economics, University of Minnesota, St. Paul, MN., 1996.

Ingco, M. and D.Hathaway, *Implementation of Uruguay Round Commitments in Agriculture: Issues and Practice*, World Bank, Washington DC, September 1996.

International Agricultural Trade Research Consortium (IATRC), *The Uruguay Round Agreement on Agriculture: An Evaluation*, Commissioned Paper No.9, July 1994.

Johnson, M.A., L. Mahe, and T.L. Roe. “Trade Compromises Between the European Community and the U.S.: An Interest Group - Game Theory Approach” in *Journal of Policy Modeling*, N°15 (April 1993), pp 199-222.

Karp, L. “A Synthesis of Agricultural Trade Economics,” forthcoming in *Handbook of Agricultural Economics*, G. Rausser and B. Gardner, ed., North Holland, Amsterdam, 1998.

Karp, L.S., and A.F. McCalla. “Dynamic Games and International Trade: An Application to the World Corn Market”, *American Journal of Agricultural Economics*, N°65 (November 1983):641-56.

Karp, L. and J. Perloff, “Dynamic Models of Oligopoly in Agricultural Export Markets,” *Competitive Strategy Analysis in the Food System,* R. Cotterill, ed. Westview Press, Boulder, CO, 1993.

Kennedy P.L., H. von Witzke, and T.L. Roe, *Strategic Agricultural Trade Policy Interdependence and the Exchange Rate: A Game Theoretic Analysis*, IATRC Working Paper No.94-2, January 1994.

Kolstad, C.D., and A.E. Burris. “Imperfectly Competitive Equilibria in International Commodity Markets.” *American Journal of Agricultural Economics*, N°68 (February 1986), pp. 27-36.

Kostecki, M.M. “State Trading by the Advanced and Developing Countries the Background,” in *State Trading in International Markets*, ed., M.M. Kostecki, St. Martin’s Press, New York, 1982.

Karp, Larry, “A Synthesis of Agricultural Trade Economics,” forthcoming in *Handbook of Agricultural Economics*, G. Rausser and B. Gardner, ed., North Holland, Amsterdam, 1998.

Krishna, K., and M.C. Thursby, “Trade Policy with Imperfect Competition: A Selective Survey” in *Imperfect Competition and Political Economy: The New Trade Theory in Agricultural Trade Research*, C.A. Carter, A.F. McCalla, and J.A. Sharples, eds., pp. 9-35. Boulder, CO: Westview Press, 1990.

Kraft, D.F., W.H. Furtan, and E.W. Tyrchniewicz, *Performance Evaluation of the Canadian Wheat Board*, Canadian Wheat Board, Winnipeg, 1996.

Krugman, P., "Industrial Organization and International Trade" in *Handbook of Industrial Organization*, R. Schmalensee and R. Willig (eds), North-Holland, Amsterdam, 1989.

Marion, B.W., *The Organization and Performance of the U.S. Food System*, Lexington Books, Lexington, MA., 1986

McCalla, A.F. “A Duopoly Model of World Wheat Pricing.” *Journal of Farm Ecoomics*, N°48 (August 1966), pp. 711-27.

OECD, *Competition Policy and the Agro-Food Sector*, OECD/GD(96)81, Paris, France,1996.

Paarlberg, P.L., and P.C. Abbott. “Oligopolistic Behavior by Public Agencies in International Trade: The World Wheat Market.” *American Journal of Agricultural Economics*, N°68 (August 1986), pp. 528-42.

Patterson, P.M., and P.C. Abbott, “Further Evidence on Competition in the U.S. Grain Export Trade,” *Journal of Industrial Economics*, XLII: 429-437, December 1994.

Park, T. and D. Pick, “Imperfect Competition and exchange Rate Pass Through in US Wheat Exports,” in *Industrial Organization and Trade in the Food Industries*, I. Sheldon and P. Abbott, eds., Westview press, Boulder, CO, 1996.

Porter, M.E., *The Competitive Advantage of Nations*, Free Press, New York, NY, 1990.

Rominger, R., *Statement Before the House Committee on Agriculture*, Deputy Secretary of Agriculture, USDA, Washington, D.C., 12 September 1996.

Schmitz, A., R. Gray, T. Schmitz, and G. Storey, *The CWB and Barley Marketing: Price Pooling and Single-Desk Selling*, 1997.

Schmitz, A., A. McCalla, D. Mitchell, and C. Carter. *Grain Export Cartels*, Ballinger, Cambridge MA, 1981.

Smith, V., and B. Goodwin, “Does Canada Enjoy Market Power in the International Wheat Market?”in *American Journal of Industrial Economics*, XLII, pp 429-437, December 1994.

Solana-Rosillo, J.B. and P.C. Abbott. *International Entry Mode Decisions by Agribusiness Firms: Distribution and Market Power*, paper prepared for the Principal Paper Session on “Foreign Direct Investment and Trade in the US Agribusiness Industry” at the Annual Meeting of the American Association of Agricultural Economics, Salt Lake City, Utah, August, 1998.

Sorenson, V.L. “ The Economics and Institutional Dimension of State Trading,” in *State Trading in International Agricultural Markets: Institutional Dimensions and Selected Cases*, L. Vernon, *et al*., eds., International Council on Agriculture and Trade, Washington, D.C., December 1991.

Thursby, M.C., and J.G. Thursby. “Strategic Trade Theory and Agricultural Markets: An Application to Canadian and U.S. Wheat Exports to Japan” in *Imperfect Competition and Political Economy: The New Trade Theory in Agricultural Trade Research*. C.A. Carter, A.F. McCalla and J.A. Sharples, eds., pp.87-106. Boulder, CO: Westview Press, 1990.

Tirole, J. *The Theory of Industrial Organization.* Cambridge, MA: MIT Press, 1988.

Young, L., M. Marchant, and A. McCalla, *The Political Economy of Agricultural Trade: A Review of the Literature on Domestic Policy Behavior and International Price Formation*, Report AGES 9103, Economic Research Service, USDA, Washington, D.C., January 1991.