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Revisiting Barriers to Trade: Do Foregone Health Benefits Matter?

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1. Background

It is often forgotten in the midst of the strategic games that comprise negotiations pertaining to market access – at either multilateral forums such as the World Trade Organization (WTO) or those that take place surrounding the establishment of regional trade agreements – that a market access increasing alternative to formal negotiations exists. Countries always have the option of unilaterally deciding to reduce their trade barriers. Of course, from the perspective of the country seeking improved market access, the key is finding a way to convince a trading partner that it is in its own interest to unilaterally reduce existing trade barriers. This avenue of increasing market access has not received much attention from either trade researchers or governments in recent years.

Given that success at the multilateral Doha negotiations is far from assured and that, at least for Canada, preferential trade agreements appear unlikely to yield significant increases in market access for agricultural products, the unilateral option should be explored. As suggested above, the key to inducing unilateral trade liberalization by a trading partner is convincing them that it is in their own interest. In essence, what is required is to demonstrate that circumstances in a product's market have changed sufficiently that the decision to impose trade barriers warrants revisiting.

2. The Decision to Provide Protection

It is well known that, in most cases, imposing barriers to market access is welfare decreasing. Leaving aside any benefits that might accrue to the government coffers, this means that the losses in surplus for consumers will be larger than the gains reaped by the producers receiving protection from imports. As with many decisions examined by economists, the actual process used to arrive at a decision to extend protection is not known, but an implicit logic can be applied¹. In the process of deciding whether to extend protection the loss of consumer welfare must be traded off against the gains to producers. In other words, political decision makers must give a lower weighting to consumer's welfare than to that of producers. For example, a decision maker may weigh the welfare of producers at three times that of consumers. Economists can estimate this weighting using standard consumer and producer surplus calculations. The result of these calculations are often reported in the following fashion: *for every \$1.00 transferred to producers consumers loose \$3.00*. Thus, if the decision to provide protection was made, decision makers must, at a minimum, believe it is

¹ For example, the decision taken by a firm to determine its level of output is conceptualized by economists as being determined where marginal cost equals marginal revenue – the profit maximizing output. Marginal costs and marginal revenues are not calculated by firms and they are not available to decision makers. Instead, economists assume that business decision makers use rules of thumb that approximate profit maximization – and that the errors are sufficiently small to ignore. Of course, where competitive pressure exists, consistently bad decisions will lead to bankruptcy or the inept management being replaced.

appropriate to value producer gains at three times consumer losses – but it could be higher (i.e. the decision to extend protection would also be made if they believe it is appropriate to value producer gains at four times consumer losses).

At some point, however, the ratio of consumer losses to producer gains should become high enough that the decision would be not to provide producers with protection. Further, if the situation in the market evolved in a way that the losses increased relative the benefits, then a previous decision to provide protection might be reversed. In other words, the country would unilaterally remove/reduce its trade barriers. As suggested above, this potential area of trade policy analysis has received little (maybe no) attention in the recent (and maybe distant) past. Hence, a most basic policy question arises: Is this an avenue of trade policy research that warrants increased research attention? Central to that question is whether markets have evolved in ways that would alter the ratio of losses to benefits to a sufficient degree to lead to a removal of protection. While it may not be possible to fully answer that question, if markets have evolved in ways that suggest the change in the ratio is likely to be trivial, then it may suggest that this is not a productive avenue for further research.

Most of the trade barriers in agriculture are not new. They have been, in many cases, in existence for decades. As a result, the rationale for granting the protection and the kinds of tradeoffs that were made when the trade barriers were put in place are *lost in the mists of time*. Hence, simply providing information to decision makers on the costs versus benefits of existing levels of protection may be sufficient to open a debate regarding the desirability of continuing protection.

3. Functional Foods

One segment of agricultural markets that has been evolving rapidly is functional foods. While no consensus has been reached on an exact definition of functional foods, in general, functional foods are those that impart benefits that exceed the benefits that arise solely from the nutrition the food provides – in most cases the extra-to-nutrition benefit are expected to arise from improved health². The market for functional foods is expanding rapidly and many countries, including Canada, believe that this will be a major future growth area for the agricultural sector. International market access for functional foods is often limited by trade barriers. In most cases these trade barriers pre-date the functional attribute of the food product being developed or recognized. Thus, functional foods appear to be a good candidate to explore the changing impact of trade barriers on the trade off between those who benefit and those who lose.

The costs associated with trade barriers can be expected to rise with the development of functional foods because consumer's willingness to pay for a food product should rise due to the additional health benefits they receive. In addition, there

² Functional foods differ from nutraceuticals – which also are expected to enhance health – in that they are consumed as food while nutraceuticals are consumed in the form of tablets, liquids, powders, etc.

may be considerable benefits to society in lower health care costs and because healthier individuals use the health care system less – an indirect benefit. For example, if a functional food reduces the probability of an individual having a heart attack then they are likely to value that food more highly – a direct benefit – and if less heart attacks occur then there will be savings on health care costs – an indirect benefit. Trade barriers raise the cost of functional foods leading to less consumption – and thus direct benefits foregone – and more sick people using the health care system. This research had two objectives: (1) to provide a preliminary investigation into how the additional benefits expected from functional foods can be incorporated into trade models and; (2) to provide case studies to examine whether the increased benefits foregone are of sufficient magnitude to cause policy makers to revisit the decision to impose trade barriers.

A range of functional foods exist. Canola oil was chosen for the case studies because it is a major Canadian agricultural product produced on an export basis. According to the United States Food and Drug Administration (FDA) (2006):

Limited and not conclusive scientific evidence suggests that eating about 1½ tablespoons (19 grams) of canola oil daily may reduce the risk of coronary heart disease due to the unsaturated fat content in canola oil. (n.p.)

Thus, Canola oil is seen as a healthier alternative to a number of important vegetable oils due to its *trans* fat-free and very low, or even zero, saturated fat but high—almost 60%—monounsaturated oil content and a beneficial omega-3 fatty acids profile. Saturated fat has been linked to rising levels of *bad* low-density lipoprotein (LDL) cholesterol in the blood and increased risk of coronary heart disease (CHD). Monounsaturated fat is helpful in reducing the risk of coronary heart disease and controlling blood glucose by lowering bad LDL cholesterol in the blood. Omega-3 fats are essential for a healthy daily diet and it helps protect against heart attacks and strokes. Thus, canola oil might be a better choice for avoiding *trans* fat in deep fried and baked foods and is becoming a popular oil of choice in restaurants and commercial food products.

4. Method

The standard partial equilibrium trade model was modified to reflect the changes that would arise from a *normal* food consumed solely because of its nutritional value becoming a functional food. Trade barriers were then imposed. This exercise produced four distinct cases which had considerably different outcomes. The four cases were: (1) supply available from domestic production or imports and a cost increasing trade barrier (such as a tariff); (2) supply available from domestic production or imports and an import prohibition; (3) supply only available from imports and a cost increasing trade barrier, and; (4) supply available only from imports and an import prohibition. The results for each of these cases were derived for a normal food and a functional food and then compared.

To determine the degree to which the ratio of the cost of trade barriers to the benefits of trade barriers would be affected, two case studies of canola oil import markets were undertaken. The first case examined the Chinese import market – characterized by supply being available from both domestic sources and imports and a cost increasing import barrier. The second case examined the import market in the United Kingdom which is characterized by supply being available from both domestic sources and imports and an import prohibition.

In both case studies estimates of consumer and producer surplus were made using standard methodologies and published data on trade volumes, domestic consumption and production, elasticities of supply and demand, and in the case of China, tariffs. In the instances when the forgone benefits of functional foods were being calculated, estimates of the foregone saving in healthcare costs were calculated and added to the forgone direct benefits. The calculation of the foregone saving in health care costs involved the adaptation of the cost-of-illness (COI) model used in health economics. Sensitivity analysis was conducted for both the trade models and the COI calculations. As a result, low, medium and high cost estimates were obtained for both the Chinese case study and the case study for the United Kingdom. The results are summarized in Table 1.

For example, in the medium Chinese case the cost to society of transferring \$1.00 of protectionist benefit to producers rose from \$1.11 when Canola oil was assumed to have no functional food attributes to \$1.56 when functional food health benefits are included. This represents a 40 percent increase. The results for the United Kingdom are higher than those for China, as one would expect, given that an import ban is a much more trade restricting policy than a tariff.

Table 1 – Societal Cost of Transferring \$1.00 of Protection to Producers

| China | | | | |
|-----------------------|-----------------------------------|-------------------------------------|-----------------------|--|
| | No Functional Food Benefit | With Functional Food Benefit | Percent Change | |
| Low | 1.11 | 1.22 | 9 | |
| Medium | 1.11 | 1.56 | 40 | |
| High | 1.11 | 1.67 | 50 | |
| United Kingdom | | | | |
| Low | 1.26 | 1.72 | 36 | |
| Medium | 1.11 | 2.63 | 236 | |
| High | 1.05 | 3.49 | 332 | |

5. Conclusion

The results suggest that the inclusion of the expected benefits of functional foods in the estimation of the social cost of protection yields more than trivial changes – changes that might cause decision makers to revisit their decision to extend protection to domestic industries. Of course, the results cannot be generalized but they do suggest that this is a valid avenue for further research in trade policy. Further, it cannot be implied from the results that politicians in countries which engage in protectionism will revisit the decision to provide protection. For that, far more information is required on how decisions regarding protection are made.

Given the slow pace of multilateral negotiations pertaining to market access, it may be wise to explore alternative methods of achieving the goal of better access for Canadian agri-food products. Given that Canada's trading partners do have the right to unilaterally lower trade barriers, providing their decision makers with better information on the cost to their societies of existing protectionist measures can do little harm. In the case of functional foods, the information may also be picked up by health care advocates that are willing to lobby their governments to improve market access. The results have been reported as ratios to illustrate the degree of change that can arise from the inclusion of foregone health benefits. Political decision makers and lobbyists in importing countries may find alternative ways of reporting the results; for example millions of dollars, more useful. Again, more research into the appropriate form of information dissemination may be appropriate.

References

Food and Drug Administration (FDA). 2006. *Qualified Health Claims: Letter of Enforcement Discretion - Unsaturated Fatty Acids from Canola Oil and Reduced Risk of Coronary Heart Disease*. (Docket No. 2006Q-0091) CFSAN/Office of Nutritional Products, Labeling, and Dietary Supplements, October 6.