

other in that the US handled the GMO issue in the expanded framework of existing industrial policy (based on the assumption that GMO would not pose new risks) without introducing new regulations specific to GMOs, whereas Europe considered GMOs as new organisms requiring environmental impact assessment prior to commercial use and established new regulations to control GMOs from the environmental viewpoint. As more emphasis is placed on the prevention of adverse environmental effects in environmental regulations, there is a general tendency to establish a regulatory system from a precautionary perspective, which resulted in the introduction of cautious attitude towards the use of GMOs. As compared with the agricultural field, more input is provided by civil society groups in policy making in the environmental field and there are many opportunities for people to have their opinions reflected in the policy. In this context, the fact that the foundation for GMO regulations in Europe was built by DG Environment created a decisive difference between the US and Europe and subsequently brought about different development.

This difference between the EU, which considers practical application of GMOs as "release into environment" and adopted a Di-

rective concerning release into environment from a precautionary perspective, and the US, which considers the same as the industrial use and applied expanded interpretation of regulations by government agencies supervising each industrial sector, is a difference in regulatory style among agencies or departments in charge (environmental protection department and industry promotion department).

Interestingly, the ministry or agency that takes the initiative in regulating GM crops (in particular, environmental safety assessment) differs by country (ministry of agriculture: US, Canada, Argentina, China, etc.; ministry of environment: EU; ministry of science and technology: Brazil, new independent agency: Australia). It would be important to examine the basic stance and methods of regulation of each country from this viewpoint in order to understand GMO regulations in such countries.

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## Research on FTA Negotiation Strategy: Learning from the Case of Australia-United States Free Trade Negotiation

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### 1. Introduction

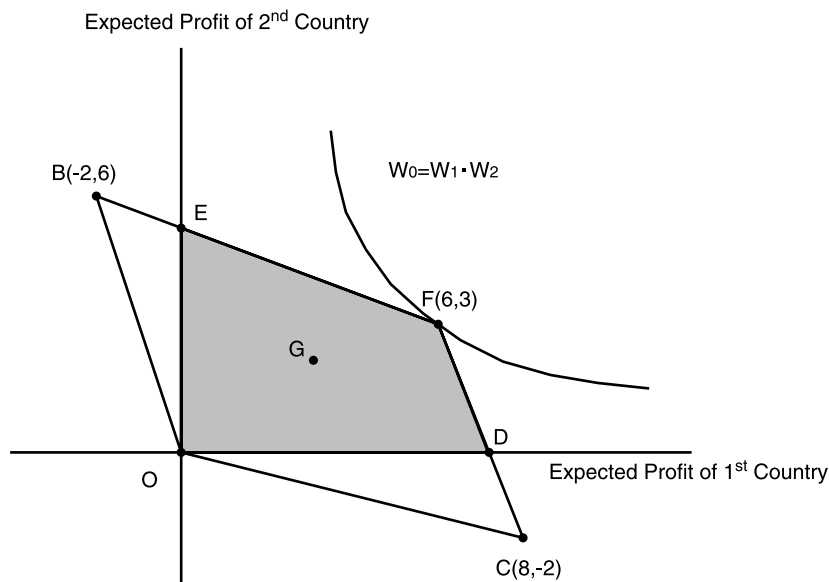
More Free Trade Agreements are coming into effect nowadays. In the negotiation process, weak or declining domestic industry is a frequent matter of concern. Interest groups of such industries sometimes strongly oppose FTA and apply strong pressure on the negotiation process. Agriculture is an industry that has shown strong opposition to FTAs. The FTA between Australia and the United States (AUS-FTA), which came into force in January 2005, is one FTA in which agriculture became controversial, after the WTO ministerial meeting at Seattle.

AUSFTA answered one interesting question about how agricultural products should be treated in an FTA between advanced countries and major agricultural exporters. The answer is that completely free trade in agricultural products is very inconvenient, even for the major exporters. The aim of this research is to analyze the negotiation process and potential economic effect of AUSFTA and provides useful information and knowledge for planning FTA strategy.

### 2. Theoretical Analysis of Tariff Negotiation

Tariff negotiation is meaningful when each country can abolish their trade barriers and enjoy the benefits of free trade. In a tariff war between two countries, even if one country abolishes all tariffs unilaterally, it is beneficial for the other country to maintain its own tariffs. Therefore, both countries have no incentive to reduce tariffs, and maintain their own tariffs. They can improve their welfare through a free trade pact which can make both countries eliminate their tariffs. However, tariff negotiation does not necessarily lead to perfect tariff elimination.

Figure 1 shows how profit from tariff negotiation would be obtained. A necessary condition for the success of tariff negotiation is that both countries must improve their welfare respectively by the change of tariffs. This condition is called the individual rationality condition. On the other hand, the expected profit in case of failure is called the reference point of the negotiation. Then, we can identify the set of profits which a country can obtain from the



**Fig. 1.** Set of Realizable Negotiation

negotiation. We regard point O as the reference point of the negotiation in Figure 1. The area where both countries can negotiate has to be superior to the reference point of the negotiation for both countries. This is the shaded area OEFD in Figure 1. Point F shows the expected profit when both countries remove all their tariffs. On the EFD line, it is not possible to increase one party's expected profit without sacrificing that of the other party, so Pareto optimum is always satisfied on EFD. The solution point of negotiation theoretically must be on OFD.

### 3.The Process of AUSFTA and the Contents of the Agreement

There were five rounds of AUSFTA negotiation in total. In the final negotiation process, agriculture was the most difficult area for reaching agreement. Sugar was an especially complicated issue. This is because the American sugar lobby influenced negotiation by exerting strong political pressure. In the end, Australia reluctantly compromised, excluding some agricultural products that are sensitive issue in the US.

Sugar and dairy products were excluded from AUSFTA. The sugar tariff rate quota (TRQ) of the United States is not to be changed by AUSFTA. Quotas for dairy products are newly created and/or increased. Within-quota tariffs for these are set to zero. However, out-of-quota dairy tariffs are maintained. In the transition period, TRQ applies to beef, tobacco, peanuts, avocado, and cotton. These products will gradually increase quotas and reduce tariffs. TRQ of these agricultural products will be eventually abolished through 4, 10 or 18 years. Safeguards for US import of beef and horticulture products are to be established against

rapid increase of imports.

### 4.Analyses of Economic Impact of AUSFTA

We adopt GTAP (Global Trade Analysis Project) for simulating the economic effect of AUSFTA. GTAP can analyze quantitatively how tariff reduction could affect the whole economy. There are a many analyses of free trade impact using GTAP.

As already mentioned, the AUSFTA is not a full free trade agreement, as it excludes sugar, dairy, etc. What difference does this sort of exception make on economic impact, compared with perfect free trade? Now it is assumed as Case 1 that the US and Australia both eliminate any tariff on imports from the other country. On the other hand, if based on the draft agreement, it is necessary to recreate the tariff quota system of the US for sugar, dairy, etc. Here the tariff quota system itself is not expressed directly, but the barrier for the excepted goods is converted into tariff rate equivalent. Specifically speaking, the tariff rate on sugar is not changed, but kept at the level of the datum point. The tariff quota is maintained for dairy products, so that the products are made subject to a 4.1% US tariff rate, based on CIE estimation. It is scheduled that tariffs will be finally eliminated for beef, so the US tariff rate is set at zero. With respect to the other products, the tariff rate is assumed to be zero, as in Case 1. These assumptions constitute Case 2 based on the draft agreement, and this is compared with Case 1.

The concept of probability has been introduced in the definitive analysis of a non-cooperative game and a solution of negotiation was analyzed. Now let us analyze AUSFTA negotiation employing bargaining theory, assuming that equivalent variation is the profit gained by

negotiation.

First the point of reference, being the starting point of negotiation, is set to be the situation before negotiation begins, and equivalent variation is set at zero in both countries. Profit obtained in case of perfect tariff elimination by both countries has the equivalent variation gained in Case 1 set as the point of free trade. Finally, profit obtained when one country keeps tariffs and the other country eliminates them is regarded as the equivalent variation respectively if the US (or Australia) keeps all tariff rates and Australia (or the US) sets all tariff rates at zero.

Based on the above assumptions, Figure 2 charts AUSFTA negotiation. The horizontal axis represents a scale to measure the US's expected profit (equivalent variation) and the vertical axis shows Australia's. When one country keeps tariffs and the other eliminates them, the former party's equivalent variation=expected profit is positive but the latter party's becomes negative to a large extent. The point of free trade is the combination of equivalent variations of the US and Australia in Case 1. Looking individually, profit from free trade is bigger for the US and smaller for Australia. If negotiation addresses the maximization of the product of the profits obtained by both countries, the solution of negotiation is given when the profits both countries obtain are equal. In dollar terms, such obtained profit amounts to \$142 million for each country. Meanwhile, profits calculated for the actually agreed scheme is the "point of agreement" in the same chart, far distant from a theoretical solution of negotiation and even out of the set of realizable negotiation away from the region of negotiation.

This set of realizable negotiation is charted by giving probability to definitive profit, not by manipulating the tariff rates of the US and Australia within GTAP. Accordingly not all the combinations of profit obtained by manipulating tariff rates on all products are included in

this set of realizable negotiation. In the first place the profit obtainable from negotiation must be larger than the point of reference. Otherwise, individual rationality is not met and negotiation becomes meaningless. However, Australia's profit calculated at the point of agreement is lower than Australia's point of reference, and is not included in the region for negotiation.

The calculation results did not present any justifiable explanation on the ground of bargaining theory for Australia's acceptance of the agreement as drafted. However, the following two points are still open to dispute. In the first place only the static effect of AUSFTA tariff elimination is handled in the model, and the results are not based on a comprehensive analysis that includes the dynamic effect of the liberalization of investment. Secondly the point of reference is placed time-wise before negotiation, but there is a possibility that a failure of negotiation may result in a level of welfare below the original level, or otherwise the point of reference might shift to another position. Depending upon where the point of reference for negotiation is set, it would be possible to explain the formation of individual rationality of the agreement as drafted.

For explaining why the US consistently maintained an obstinate stance and made a compromise in the field of agriculture it should also be pointed out that the economic effect of AUSFTA is small and that exports to Australia hardly weigh for the US. AUSFTA is estimated to generate potential economic advantage of \$1.3 per head in the terms of equivalent variation in Case 1 for the US, well below Australia's \$2.2.

The results of this analysis cannot instantly confirm that AUSFTA is unreasonable for Australia, but it seems that Australia had a chance to win higher profit by further negotiation and that Australia's concession was excessive.

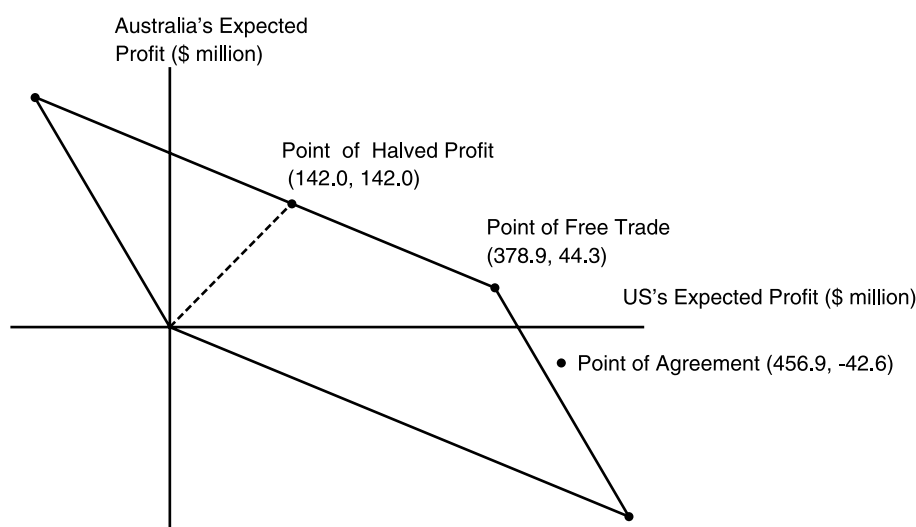


Fig. 2. Example of Negotiable Area in AUSFTA negotiation