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Chapter Author: Junichi Goto, Koichi Hamada

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EU, NAFTA, and Asian Responses: A Perspective from the Calculus of Participation

Junichi Goto and Koichi Hamada

4.1 Introduction

It is safe to say that over the past 10 years, the Asia–West Pacific area has had the most active and fastest growing economy in the world. It is a site of great ferment. The Asia–West Pacific area encompasses a wide variety of regions, starting in the south with Oceania and extending across South Asia, the ASEAN countries, the NIEs, China and other transitional economies of Asia (TEA), and Japan. By comparison, the European Union is relatively compact, and the North American Free Trade Area (NAFTA), though it may extend farther south in the future, does not yet have the same geographic scope.

According to the Nomura Research Institute (1989), in 1987 the combined GNP of all West Pacific economies (excluding South Asia) was nearly \$6.34 trillion. This figure is comparable to those for the European Community (with a GNP of \$6.04 trillion) and North America (with a GNP of \$7.17 trillion). Further, it is expected that recent appreciation of the currencies of some West Pacific countries has increased the relative economic sizes of these countries. Thus, the regional economies of the West Pacific, Europe, and North America are similar in size.

In terms of growth rate the Asian performance has been remarkable. Table 4.1 shows the growth rate of GDP for developing member countries (DMCs) of the Asian Development Bank. On average, these Asian and Pacific economies grew almost 8 percent through the 1980s. In particular, China achieved double-digit growth in the 1980s, and its growth rate for recent years has exceeded 13 percent. Growth rates for the NIEs and ASEAN countries were also

Junichi Goto is professor of economics at Kobe University and a visiting fellow at Yale University. Koichi Hamada is professor of economics at the Economic Growth Center, Yale University.

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Table 4.1 Growth Rate of GDP (percent per annum)

Country	Average 1971-80	Average 1981-90	1991	1992	1993
Newly Industrializing Economies	9.0	8.3	7.4	5.5	5.7
Hong Kong	9.3	7.2	4.1	5.3	5.5
Korea	9.0	8.8	8.5	4.8	4.7
Singapore	7.9	6.3	6.7	5.8	9.9
Taipei, China	9.3	8.5	7.2	6.6	6.2
People's Republic of China and Mongolia	7.9	10.4	8.0	13.2	13.4
China	7.9	10.4	8.0	13.2	13.4
Mongolia	7.1	5.6	-9.9	-7.6	-1.3
Southeast Asia	7.4	6.1	6.4	6.1	6.4
Cambodia	-	-	7.6	7.0	5.7
Indonesia	7.7	5.5	6.9	6.4	6.5
Laos	-	-	4.0	7.0	4.0
Malaysia	7.8	5.2	8.7	7.8	8.0
Philippines	6.0	1.0	-0.5	0.1	1.7
Thailand	7.9	7.9	8.1	7.6	7.8
Vietnam	-	7.1	6.0	8.3	8.0
South Asia	4.0	5.7	2.1	4.5	3.8
Bangladesh	5.8	4.1	3.4	4.2	4.5
Bhutan	-	7.4	1.9	5.3	5.0
India	3.7	5.8	1.2	4.0	3.8
Maldives	-	12.1	7.6	6.3	6.1
Myanmar	4.7	-0.1	-1.0	10.9	5.8
Nepal	3.2	5.0	4.6	2.1	2.9
Pakistan	5.2	6.2	5.6	7.7	3.0
Sri Lanka	4.3	3.9	4.6	4.3	6.1
Pacific Islands	-	1.2	6.6	6.4	10.1
Cook Islands	-	5.8	7.0	11.0	1.2
Fiji	4.3	1.7	0.7	2.9	1.8
Kiribati	-	-0.6	2.8	3.1	2.9
Marshall Islands	-	10.1	0.6	0.1	-
Micronesia	-	-	-	-	-
Papua New Guinea	-	1.0	9.5	8.5	14.4
Solomon Islands	-	3.4	3.2	8.2	6.0
Tonga	-	-	5.8	-3.7	0.0
Tuvalu	-	13.4	11.4	8.9	8.7
Vanuatu	-	1.6	3.5	-0.1	2.0
Western Samoa	-	1.0	-1.6	-4.2	4.8
Average	6.8	7.8	6.3	7.4	7.4

Source: Asian Development Bank (1995).

high. By contrast, in the past several years, the Philippines recorded relatively low growth rates, but it is reported to have experienced remarkable growth in 1994.

Though similar in their growth experience, the Asia–West Pacific countries show great diversity in ethnicity, religion, political systems, history, and economic mechanisms. The diversity is well illustrated in the case of religion. Christianity is prevalent in Australia, New Zealand, and the Philippines and fairly influential in Korea. Islam is the main religion of Pakistan, Bangladesh, Malaysia, and Indonesia. Indeed, Indonesia has the largest Moslem population in the world. Elsewhere, Hinduism and Buddhism are influential. And across the Asian Pacific, the ethic of Confucianism lies in the background.¹

The association between growth and Confucian thinking was a very appealing idea in the past decade, when the NIEs and Japan were growing very fast. Now, however, given the remarkable growth records of many diverse Asian countries, one wonders whether Confucianism really is the main driving force.

Political systems vary as well. Many NIEs were under dictatorships, and even now these countries have powerful central governments. In the postsocialist countries, or TEAs, the political systems are often close to dictatorial. The state of human rights in some countries is criticized by developed nations. Objectively speaking, history seems to show that dictatorship does not necessarily obstruct rapid economic growth. We are not advocating dictatorship, of course, and we cannot attribute the high growth rates of the Asia–West Pacific area to dictatorial governments.

History creates important and varying preconditions in the Asian Pacific countries. The Philippines have a history of American colonial influence; the South Asian countries, Singapore, and Hong Kong were under British colonial rule; and Korea and Taiwan were under Japanese influence. It would be interesting to study how local ethnic, social, and economic systems have interacted with colonial legal and economic infrastructures in these countries. In any discussion of the formation of a free trade area in South Asia, the fact should be noted that the South Asian countries formed a single country until the colonial control of Great Britain ended (Srinivasan 1994).

Finally, although most of the Asian Pacific countries now have market economies, the degrees of openness of these economies are also diverse. TEA countries are by definition in transition from socialist to market economies. The pleasant surprise in Asia is that such transitional economies have been doing well on average, and extremely well in some particular cases. In external trade,

1. Morishima (1982) maintained that the ethic of Confucianism played the same role as that of Protestantism did in the development of capitalism. However, his interpretation of Confucianism emphasized the hierarchical distinction between superior and subordinate, a view that seems to have been somewhat conditioned by his navy experience in Japan and to neglect the various facets of Confucianism. In one country the emphasis of Confucianism may be on its liturgical aspects, and in another country Confucianism may be regarded simply as a way to be successful in the bureaucracy and to justify including family and friends in the government in a manner similar to the spoils system in the United States.

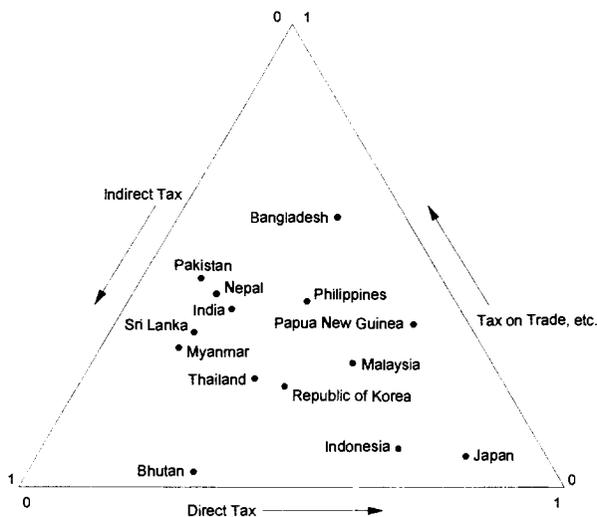


Fig. 4.1 Tax revenue triangle

Source: Hamada (1994).

Singapore and Hong Kong are free ports, pursuing free trade systems, and both have benefited from this orientation. Other countries have some protectionistic elements. A tax revenue triangle is presented in figure 4.1. A country's position in the triangle indicates the degrees to which the country depends on direct taxes, indirect taxes, and trade-related taxes such as tariffs and levies.

Clearly, it is difficult to single out an explanation for the economic success of the Asia–West Pacific region. At least, however, one may note that all the countries of this region border on the Pacific or the Indian Ocean and thus have access to transportation by oceanic routes. For this and other reasons, the degree of intraregional trade is quite high—as measured either by the trade intensity index or by the trade dependency index, defined as the ratio of the sum of exports and imports to GNP (for details, see Goto and Hamada 1994, 370, 374).

Asian countries have been watching the European Union and NAFTA carefully, and sometimes nervously. As analyzed by Jacob Viner (1950), the establishment of a free trade area or a customs union gives rise to trade creation effects within the union but to trade diversion effects outside the union. If the trade diversion effects of the European and North American coalitions are too strong, Asian countries worry, the economic vitality of Asia may be considerably impaired.

There are at least two movements toward economic integration within Asia. One is the East Asian Economic Caucus (EAEC); another is the Asia Pacific Economic Cooperation (APEC). EAEC is led by Premier Mahathir of Malaysia. He proposes that the ASEAN countries and East Asian nations such as

Korea, Japan, and Taiwan create an economic community of more or less strong economic ties. The United States, of course, does not like Asian integration from which it is excluded. Japan, which depends heavily on trade with the United States, has therefore shown ambivalence toward EAEC. The most recent news is that Japan will not join the caucus.

APEC was created in 1989 by U.S. initiative, and perhaps at Japan's implicit suggestion. It is a loose economic integration of the entire Pacific Economic Basin—embracing the United States, Canada, Mexico, and all the Asian and West Pacific countries including Australia and New Zealand. In 1994, APEC members agreed to realize free trade in the region by 2010 for developed countries and by 2020 for developing countries. If it proceeds, the United States will at the same time be a member of NAFTA, a formal free trade area, and a member of APEC, a presumably weaker, but nevertheless solid integrated area.

The purpose of this paper is to assess the economic conditions that the Asian countries face with the formation of the European Union and NAFTA. The following questions are addressed: Is it desirable for Asia to form its own trading area? If desirable, is it better to have a closed union like EAEC or a more open union like APEC? In order to analyze these questions, we rely on public economics and strategic considerations that clarify the rational incentives nations have to participate or not participate in economic unions or other forms of economic cooperation.

In sections 4.2 and 4.3 we present two related but different types of models of tariffs and trade. In section 4.2, we analyze a model of symmetric nations (or symmetric groups of nations) that produce differentiated products under increasing returns to scale and monopolistic competition. We assume that some group of nations is deciding whether to unite into a free trade area and study the incentive problem in this group. In section 4.3, we again consider a trade model with differentiated products under increasing returns to scale and monopolistic competition. We vary the sizes and the number of countries, however, and show that properties of the Nash equilibrium depend on the number of countries, the relative sizes of countries, and in particular the relative size of the leading country, namely, the hegemon. In any case, the noncooperative Nash equilibrium usually differs from the Pareto-optimal configuration.

In section 4.4, we use the calculus of participation to analyze tariff policy strategy. In other words, we ask how a country may be motivated to join a regional agreement or coalition. In section 4.5, we come back to reality and in the light of these theories discuss the incentive structure concerning Asian counteractions to regionalism in Europe and North America and concerning the formation of EAEC and APEC.

4.2 Implications of a Symmetric Tariff Bloc Model

We would like to summarize briefly the results of Goto and Hamada (1995), which studies the symmetric world with differentiated products with increasing returns and monopolistic competition.

Suppose there are four symmetric countries or four symmetric groups of countries that produce differentiated products with increasing returns, namely, with fixed cost. Accordingly, monopolistic competition prevails as the market structure. This is a variant of the new trade models that have been studied extensively by Dixit, Krugman, Lancaster, and many others. For a more detailed formal model of the analysis in this section, see appendix A of this paper. Using the model presented in appendix A, we compare the welfare level of each of the four countries in the following three stages in order to understand the incentive-theoretic political economy of regional economic integration in Asia and the Pacific:

Stage 1. Before integration

In this original stage, the four countries engage in trade with each other, and all imported products are subject to the same tariff rate t .

Stage 2. Initial integration

In this second stage, countries 1 and 2 are integrated, and there are no tariffs on trade between these two countries. Country 3 and country 4 are still separated, however. Therefore, trade of countries 3 and 4 with the free trade area, as well as trade between country 3 and country 4, is subject to the original tariff rate t .

Stage 3. Counterintegration (two polar blocs)

As will become clearer in the following analysis, country 3 and country 4 are worse off after the integration of countries 1 and 2, and there is an incentive for country 3 and country 4 to form a counterbloc (e.g., the Mahathir Plan after EC92 and NAFTA in the real world). In this third stage, countries 1 and 2 form one economic bloc, and countries 3 and 4 form another. Trade within each bloc is subject to no tariff, while trade between blocs is subject to the common external tariff (t).

We start, after making the simplifying assumption of constant elasticity of demand, with four regions that have not formed any free trade areas and that each levy an identical tariff rate on products from outside regions (stage 1). A region is either a country or a group of countries within which trade is free.

Four regions are trading with each other with levying a constant tariff rate. With the simplification used by Krugman that the elasticity of demand for each differentiated product can be regarded as a constant, production decisions are predetermined by technology regardless of the value of tariffs. Note that, as do Krugman and many others, we assume a large number of differentiated products (N) and therefore neglect the second term in the denominator of equation (5) in appendix A. Therefore, the number of types of differentiated products and the elasticity of substitution among them are the same before and after the integration. In other words, while the model captures a terms-of-trade effect, it does not capture a possible positive effect of regional integration resulting from more exploitation of increasing returns to scale technology. Trade is bene-

Table 4.2 Welfare Implication of Regional Integration

	<i>Stage 1</i> Before Integration	⇒	<i>Stage 2</i> Initial Integration	⇒	<i>Stage 3</i> Counterintegration
1. Terms of trade					
Countries 1 and 2		↗		↘	
Countries 3 and 4		↘		↗	
2. Welfare					
Countries 1 and 2		↗		↘	
Countries 3 and 4		↘		↗	

Source: See Goto and Hamada (1995) for details.

ficial because it allows the consumption of a more balanced composition of differentiated goods. In future work, we will investigate this issue more thoroughly by incorporating variable elasticities as well as changes in terms of trade.

The role of tariff rates is thus to give preferential prices to domestic products and, after integration, to the products of other countries in the free trade area to which a particular country belongs. Consumers prefer consuming as evenly as possible both domestic and foreign products. However, because foreign products are subject to tariffs, consumers are compelled to consume more domestic (or within-region) goods than foreign goods. The unevenness in consumption created by tariff rates is the cost of protection. Conversely, a balanced consumption basket of differentiated products is the source of the gains from trade. In this setting, suppose two regions unite without changing tariff rates on goods from outside the bloc (stage 2). Then each region will give preferential treatment to the other region in the tariff bloc. Therefore, the regions in the integrated area will gain as a result of trade creation effects. However, those regions excluded from the integrated area will suffer as a result of trade diversion effects. More trade will take place within the integrated area, so that other countries will find it more difficult to compete with goods in the united regions. We find that with a given tariff rate, an integration of two countries will never fail to have negative effects on the rest-of-world countries left behind.

The impact of regional integration on welfare levels, based on the formal model shown in appendix A, is summarized in table 4.2. While we omit the proof, due to space limitations (readers interested in the proof, see Goto and Hamada 1995), note that the unambiguous results in table 4.2 do not depend on the parameter values of the model.

Article 24 of the GATT stipulates that countries that are uniting into a customs union or free trade area should not raise tariffs. Judging from the results described above, however, Article 24 is not good enough as a safeguard against the rest-of-world loss generated by a free trade area.

Thus incentives emerge for the rest of the world to unite into a customs

union or free trade area. After this countervailing integration, the symmetric structure is restored, with two integrated areas each of which has two regions (stage 3). The situation of the rest of the world improves, and the situation of the first free trade area deteriorates from the position its members obtained when the other countries were not integrated. This will be an incentive, and possibly a justification, for the Asian countries to integrate to form their own free trade area.

Needless to say, when the four countries form a single union (i.e., when totally free trade prevails in the world), the welfare level of each country is higher than under stage 3. For this reason, we cannot conclude from the above analysis that it is optimal for the Asian countries to form their own countervailing trading bloc. Instead, the above analysis merely suggests that the welfare of the Asian countries is higher when they form a countervailing free trade area than when they are left out of existing trading blocs. Since the analysis based on the model predicts that the welfare of the Asian countries will increase even more if they are united with the Western Hemisphere, as well as with each other, APEC, which includes countries on both sides of the Pacific as its members, seems to be a promising option.

4.3 Optimal Tariffs and the Relative Size of Regions

In the above model, the regions are identical in size, and tariff rates are constant. Of course, the relative size of the free trade area will affect the motivations of regions to join an integration. Also, regions normally choose the most desirable tariff rates, which also depend on the relative size of a tariff-imposing region.

This is not the place to develop all the mathematics of optimal tariffs and retaliation processes, but in order to give the reader an idea of what is involved we sketch the results obtained by Gros (1987) and interpreted by Krugman (1991). The question is, what is the optimal tariff structure in the world where differentiated goods are produced under increasing returns and monopolistic competition? In other words, what is the reaction curve of a region given other regions' tariff rates? This question was solved by Gros, and then a simplified derivation was developed by Krugman in such a way as to be applied to economic integration. Krugman (1991) and Stein (1994) considered the effect of dividing the whole world into various blocs of equal sizes and asked what the optimal number of symmetric blocs was. In this section, we instead consider the world where the relative sizes of bloc are variable and ask what the incentives are for each country or region to create or join a bloc. We believe that this approach is at least complementary to and more realistic than Krugman and Stein's.

Consider the case in which the world is divided into two blocs of different sizes. We can derive a formula for the optimal tariff rate of bloc I with respect to a given tariff rate of bloc II (Gros 1987). The tariff rate of the home country

is nonzero even if the country is infinitesimally small. This reflects the product differentiation and monopolistic competition assumed in the new trade model.

On the other hand, the optimal tariff is a decreasing function of the tariff rate of the trading partner and an increasing function of the relative size of the home country. In order to understand the effect of monopolistic or monopsonistic power on tariff-setting behaviors of countries that differ in size, a formal model is presented in appendix B. To make the point as clear as possible, appendix B presents a Ricardian model of trade; however, readers familiar with trade theory will easily understand that properties similar to those obtained in the appendix will hold for the Heckscher-Ohlin model with variable factor proportions. It can be shown that similar conclusions can be extended to a model with increasing returns to scale and monopolistic competition.

In our model with a large country (a hegemon) and a small country (or countries) summarized in appendix B, the implication of the sizes of countries is obvious. In short, in international trade with tariffs as policy instruments, the hegemon has the capability to manipulate the terms of trade to its advantage. Therefore, it is optimal for a larger bloc to impose a higher tariff rate. Thus, if two blocs engage in a tariff war, the larger bloc gains more by imposing a high tariff. The great exploits the small!

One can extend this analysis to the case of a many-country world where a large group of countries will find it more profitable to impose a higher tariff rate. If economic integration proceeds, there is an incentive for a group of nations like the European Union or NAFTA to impose a higher rate of tariff. Article 24 of the GATT would work against this. The article is a safeguard agreement to prevent such monopolistic behavior. Our results in section 4.2 indicate, however, that simply keeping the original tariff rate could still be harmful for the rest of the world.

Consider a situation in which a large country and many small countries impose a minimum level of tariff, but the large country can choose to react in such a way that it becomes the Stackelberg leader. This country would create a larger and larger free trade area. The larger group will find it more profitable to impose an optimal tariff. Article 24 of the GATT prohibits this, but the analysis of the last section shows that in spite of this GATT provision it would be profitable for countries to unite. Of course, this process cannot go all the way. If there are hardly any other countries remaining in the rest of the world, the optimal tariff may not yield any gain because there is hardly anyone left to exploit. So, at some point, the process should stop. In such a world, where all nations are united except, say, Monaco, there is nothing to exploit from Monaco, whatever optimal tariff the bloc members charge.

4.4 The Calculus of Participation

We would like to apply the calculus of participation to the formation of free trade areas. The calculus of participation, sometimes called the theory of clubs,

regards the decision of a nation as a rational decision among various alternatives and subject to various constraints. Nations are supposed to decide whether to join a coalition or group by calculating the national costs and benefits of joining the coalition or group.

The incentive problem of forming or joining an economic union can be analyzed from the standpoint of the calculus of participation. Olson (1965) developed an analysis of collective action, but the analysis is of limited significance in the study of economic integration because it assumes a predetermined membership. Buchanan (1964) developed an economic theory of clubs that allows for variable size of membership. Although his analysis was directed mainly at the problem of efficiency rather than the political structure of conflict, it provides a useful tool for analyzing collective action with variable members.

As indicated in Hamada (1985), international economic relations can be characterized as a two-stage game. The first stage requires players to agree on a system or rule, and the second involves the interplay of economic policies under a given rule. The second stage is analogous to the prisoner's dilemma; the first to the battle of the sexes.

Recently, in the theory of participation, the tools of public economics have been applied to political science, providing the theoretical basis for associating group behavior with individual rationality.²

The rational theory of participation (see, e.g., Riker and Ordeshook 1973, chap. 3) indicates that an individual decision unit decides to participate in a collective action if the anticipated benefit is larger than the cost. The rational decision for a country contemplating membership in an economic union is to join if the benefits from participation are larger than the costs.

When the benefits of collective action exhibit a public-good character, however, the amount of collective action may be less than optimal, where optimality is judged by the Paretian standard. Olson showed this by applying the theory of public goods to collective action (Olson 1965). Suppose there is a single public good whose benefits are commonly shared by participating agents. The rational decision by an individual agent is to equate the marginal private benefit from the public good to the marginal cost of supplying a unit of the public good. However, the optimal outcome from the point of view of society as a whole is to equate the marginal cost to the social benefit, which is the sum of the individual benefits. Thus, the supply of the public good may be less than optimal because the individual decision unit does not take account of the external effect on other decision units. Therefore, even when a consensus exists concerning the objective of a collective action, the amount produced may be too small. The interesting testable hypothesis about group behavior is that the behavior of a large group will be different from that of a small group; a

2. The application of tools developed in economics to politics requires caution, but recent developments in political science have shown that the application of economic analysis can clarify the political analysis of economic conflicts.

shortfall in supply is more likely the larger the group because the free-rider problem intrinsic in the supply of public goods without the possibility of exclusion will be more acute if each member shares in the common benefit to only a small degree. A second hypothesis is that the decision unit that receives a relatively large proportion of the benefit of public goods will be likely to bear more than a proportional share of the cost. In other words, if each participant behaves rationally according to the private benefit-cost calculation, a small decision unit can exploit a large one.

The same argument can be applied to the analysis of public “bads” as well. If costs are incurred in preventing the generation of public bads, then there is a tendency to overproduce public bads, inasmuch as the marginal social harm of public bads is larger than their marginal private harm.

Olson’s theory of collective action, interesting as it is, is subject to several criticisms. First, as pointed out by Wagner (1966) and developed in more detail by Frohlich, Oppenheimer, and Young (1971), the theory of collective action neglects the role of political entrepreneurship or leadership in integrating the individual benefits from a collective action. If an agent with political entrepreneurship can persuade the group of the effectiveness of collective action in spite of the apparent excess of individual cost over individual benefit, then the proper amount of collective goods may be supplied, with some leadership surplus being left over for that agent.

Second, the analysis assumes passive behavior on the part of each participant and accordingly neglects the leader-follower relationship analyzed in von Stackelberg (1934). If a participant picks the most profitable point on the opponent’s reaction curve, then he behaves as a leader and can enjoy the leadership or exploitation solution. (To avoid complication arising from the two uses of the word *leadership*, this case will be called *exploitation*, while leadership in the sense of political entrepreneurship will be called *political entrepreneurship*.)

An economic theory of clubs with variable group size and with possible exclusion of nonmembers from enjoyment of collective goods was developed by Buchanan (1964). According to his analysis, collective goods are supplied optimally provided appropriate charges are imposed on the use of the service and provided the services of the collective goods can be exclusively supplied to members of the group. This approach has more relevance to monetary integration since the benefits of integration are public in that their enjoyment by a particular member does not diminish the enjoyment of others but at the same time most of the benefits are enjoyed almost exclusively by the countries participating in the monetary union. In short, there exists nonrivalry in the consumption of the services of a monetary union but not nonexclusiveness.

The decision of countries considering whether to participate in an economic union is based on a comparison of the gains from joining the union with the costs. The resulting implication is straightforward: if there are externalities in increasing the size of membership, an individual nation’s participation decision

based on a rational calculation may lead to a smaller than optimal economic union even if the country is fully aware of the costs and benefits. The problem is that an individual nation's decision is based on a private benefit-cost calculation, while the public benefit to the group as a whole includes the gains to the countries that are already in the union.

In the case of a free trade area, a nation decides whether to form a free trade area (or to join an existing one) by comparing the benefits with the costs. In the tariff case, however, the common tariff is the public good. In other words, the joint consumption good is the optimal tariff for the coalition to impose on the rest of the world. What are the costs to coalition members? There can be costs on the political dimension, which we will go into later, but aside from these, the sacrifice is not so great because small countries cannot effectively retaliate.

Therefore, the common tariff will be the optimal tariff from the point of view of the union. The result would be that each country in the union would like to extend the free trade area up to the point at which the rest of the world cannot be exploited further.

On the other hand, if the tariff is restricted by Article 24 of the GATT, the dominating union cannot reach its optimal size but must stop somewhere before that point. Thus, by limiting tariff strategy, GATT Article 24 keeps countries from creating extraordinarily large free trade areas.

So far, we have been concerned with the situation in which the national interest is united. But it is sometimes difficult to agree on "the national interest." And there is a need to consider the effect of domestic conflicts and sectoral opposition to the formation of a free trade area. During the NAFTA negotiations, for example, labor unions in the United States opposed the creation of a free trade area. In developing countries, many sectors oppose joining a free trade area because import-competing industries fear loss of profit due to foreign competition without tariff protection. Therefore, even in a world in which a country can impose the optimal tariff for national advantage, there will still be opposition to a free trade area from labor unions and various sectors.

When a nation cannot choose the optimal tariff, there will be more problems for any movement against the formation of a free trade area. Such an area may obstruct international trade, but at the same time it will block the formation of a large free trade area that will exploit the rest of the world by its monopolistic power. These discussions are related to the hegemonic stability theory, a favorite topic of political scientists. The incentives of small countries and the incentives of a hegemon can be analyzed from this point of view. The solution differs greatly between the case in which monopolistic power of trade is concerned and the case in which the creation of common public goods is involved. In the former case of private goods, the large exploits the small; in the case of public goods, the small exploits the large.

Ideally, the calculus of participation would be able to predict the dynamic

process of coalition formation among countries. We understand the effect on a particular country of integrating several countries (or regions). We do not fully understand *why* a group of nations emerges as an economic union and how the process of integration evolves. *N*-person game theory gives only a partial explanation. In order to answer these questions, we probably need a multidimensional approach incorporating geography and military relations, in addition to economic factors.

4.5 The Future of the Asian Community

From these discussions the following observations about the Asian situation emerge.

First, EAEC, under the leadership of Malaysia, can be considered a natural response by the Asian countries to the two big blocs in the world, the European Union and NAFTA. It is also natural that Americans would not like this move because the formation of an exclusive economic bloc in Asia would have a negative economic impact on non-Asian countries. But we do not exactly understand why many Americans show such an emotional attitude toward the EAEC proposal, claiming that it is racist, anti-Caucasian, and economically vague. Premier Mahathir addressed a letter to the readers of the *Yomiuri*, the largest newspaper in Japan, asking why Americans have allowed Europeans to create a common market but have opposed such a measure in Asia. The authors found this argument quite persuasive.

Second, it is natural for the United States to promote opposing coalitions like APEC to nullify the possible economic impact of EAEC. APEC is supported by Japan as well. At the moment Japan is leaning away from joining EAEC. The Japanese economy is interwoven very closely by way of trade and foreign investment with the U.S. economy. Thus, even though in recent years Japan's trade with Asia has surpassed its trade with the United States, the trade tie between Japan and the United States is strong. Therefore, although some Japanese wish to go "out of the West to Asia"—in contrast to the motto of the Meiji Restoration period, "out of Asia to the West"—Japan is obliged to remain neutral. Because of this Japanese ambivalence and persistent American meddlesomeness the world over, APEC is expected to turn the vast Asian Pacific region into an enormous economic community with yet to be specified (probably loose) economic integration.

This attitude (opposition to EAEC) of the United States gives us an impression of a declining hegemon. In more objective terms, however, we should also note that APEC has a different structure than NAFTA or the European Union. The United States belongs to NAFTA and at the same time intends to place itself under the same umbrella as all the Asian Pacific countries. It gives the set of integrations throughout the world a rhizome rather than a tree structure, so to speak. Therefore, if we may take an optimistic view, through the United

States the tightness of the NAFTA trade bloc may be broken as by a wind vent, and there may be some possibility of creating a superimposed regional integration of North America and the Pacific.

Thus, compared with the situation in which Asia creates an independent trading bloc and counteracts the European Union and NAFTA, American acquisitiveness and the loose structure of APEC may yield a result that is beneficial to both the American and the Pacific regions.³ Perhaps APEC is a way toward international free trade.

Appendix A

A Symmetric Tariff Bloc Model

This appendix briefly summarizes the symmetric tariff bloc model of Goto and Hamada (1995).⁴

In the model, consumers of a representative country k ($k = 1, 2, 3, 4$) possess the following individualistic social utility function (U_k):

$$(1) \quad U_k = \left\{ \sum_{i=1}^N C_{ik}^\beta \right\}^{1/\beta}, \quad 0 < \beta < 1,$$

where C_{ik} is the amount of consumption of the i th differentiated product in country k and N is the number of types of differentiated products available to consumers. Consumers maximize their utility subject to the budget constraint

$$(2) \quad \sum_{i=1}^N P_{ik} C_{ik} = Y_k,$$

where P_k is the domestic price (i.e., tariff-inclusive price) of the i th differentiated product in country k and Y_k is the national income of country k .

From the above utility maximization problem, we obtain the following inverse demand functions:

$$(3) \quad P_{ik} = C_{ik}^{\beta-1} Y_k / Z_k,$$

where

$$(4) \quad Z_k = \sum_{i=1}^N C_{ik}^\beta.$$

3. This is a natural conclusion of our analysis in section 4.2. Namely, in a world of four countries (or regions), the welfare level of each country is higher when all four countries unite into a single union than when there are two polar blocs.

4. While the basic model developed in Goto and Hamada (1995) can incorporate any number of countries, differences in country size, and, to some extent, asymmetric tariffs, the model in this appendix is a simplified version that assumes four identical countries and symmetric tariffs.

From equation (3) the elasticity of demand for the i th differentiated product (ε_{ik}) is

$$(5) \quad \varepsilon_{ik} = \frac{1}{(1 - \beta) + \beta C_{ik}^\beta / Z_k}.$$

If we assume large N and the symmetry of each differentiated product, as Krugman (1979) and Dixit and Norman (1980) did, we can simplify the problem; for example, equation (5) reduces to the following:

$$(5') \quad \varepsilon = 1 / (1 - \beta).$$

Note that we now omit the subscripts i and k for ε because the demand elasticity of the products turns out to be the same for all products due to the symmetry assumption.

The producer of the i th differentiated product in country k is characterized by the following cost function:

$$(6) \quad TC_{ik} = W_k F + W_k m \left(\sum_{j=1}^4 C_{ij} \right),$$

where TC_{ik} and W_k are the total cost of the i th producer and the wage rate in country k , respectively; m is the labor input requirement per unit of output, while F is a fixed amount of factor input necessary for any positive amount of production. The producer maximizes the following profit function:

$$(7) \quad \pi_i = \sum_{j=1}^4 \frac{1}{1 + t_j} P_j C_{ij} - W_k F - W_k m \left(\sum_{j=1}^4 C_{ij} \right),$$

where π_i is the profit of the i th producer and t_j is the tariff rate imposed by country j on the imported differentiated product. Note that due to the assumption of a symmetric tariff, t_j is the same for all j , except for the case of $j = k$. Needless to say, there are no tariffs imposed on domestic goods. From the profit maximization problem, we obtain the following profit maximizing price for the i th producer in country k , as shown in equation (8). Note that without loss of generality, country k is assumed to produce the first n_k types of differentiated products.

$$(8) \quad P_{ij} = W_k m (1 + t_j) / \beta.$$

Further, we assume free entry and free exit. Therefore, the profit of each existing firm is forced to zero. Hence, equation (9) holds in equilibrium:

$$(9) \quad \pi_i = \sum_{j=1}^4 \frac{1}{1 + t_j} P_{ij} C_{ij} - W_k F - W_k m \left(\sum_{j=1}^4 C_{ij} \right) = 0.$$

The demand for labor by the i th producer (l_i) is obtained:

$$(10) \quad l_i = F + m \sum_{j=1}^4 C_{ij}.$$

The domestic labor supply is assumed to be constant; that is, there is no wage-leisure trade-off. Therefore, the sum of labor input in all firms in country k is equal to the amount of the domestic labor supply in that country (L):

$$(11) \quad \sum_{i=1}^{n_k} l_i = L,$$

where n_k is the number of firms in country k .

The tariff revenue accrued to the government is assumed to be distributed to domestic consumers in a lump-sum fashion. Since there is no profit in equilibrium, national income consists of factor payment and tariff revenue.

$$(12) \quad W_k L + \sum_{i=n_{k+1}}^N \frac{t_k}{1+t_k} P_{ik} C_{ik} = Y_k,$$

where t_k is the tariff rate imposed by country k on its imports.

The above model is complete, and the above specification gives equilibrium conditions for a representative country k . We can solve the model, once the values of the parameters (m, F, β, t_k, L) are identified.

Using the above model, we compared the welfare level of the three stages discussed in the main text, (1) before integration, (2) initial integration, and (3) counterintegration. While we omit the proof, due to space limitations (readers who are interested in the proof, see Goto and Hamada 1995), using the above model, we can rigorously demonstrate the pattern of welfare change shown in table 4.2.

Appendix B

The Size of Countries in a Model of Tariffs

Let us start from a two-country situation of the Ricardian model where labor is the only factor of production. To produce two goods 1 and 2, the larger country (hegemon) has input coefficients a_1, a_2 , and the smaller country has input coefficients a_1^*, a_2^* . The larger country has a comparative advantage in producing good 1 so that $a_1/a_2 < a_1^*/a_2^*$. The two countries have labor endowment L and L^* , and the larger country is large enough to warrant $\max(L/a_1, L/a_2) > \max(L^*/a_1^*, L^*/a_2^*)$. The utility function of a representative consumer is expressed as a function of per capita consumption c_1, c_2 , and c_1^*, c_2^* as $U(c_1, c_2)$ and $U(c_1^*, c_2^*)$. Both governments are assumed to conduct their tariff policies in such a way as to maximize the utility of the representative consumer.

Then the offer curves are drawn as in the figures. Figure 4B.1 indicates the case where the hegemon is so large that the smaller country's offer curve intersects with that of the hegemon on the straight line (with slope a_1/a_2) through the origin. Then the smaller country satisfies the definition of a "small country"

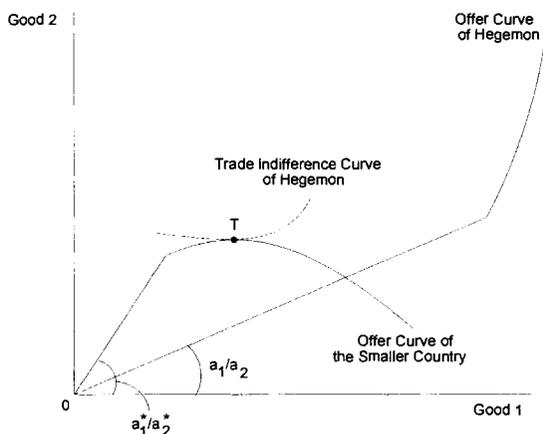


Fig. 4B.1 Offer curves of hegemon and small country

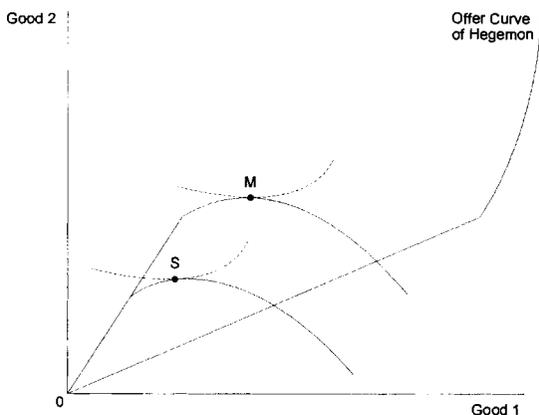


Fig. 4B.2 Size of small country and gains to hegemon

and thus cannot take advantage of the elasticity of the hegemon. The hegemon can impose an optimal tariff to exploit its monopolistic power in exports, or monopsonistic power in imports, in such a way to make its trade indifference curve tangent to the offer curve of the smaller country, that is, at T.

If the size of the smaller country is very small, the gain in terms of trade does not bring substantial welfare gain because the amount of trade is limited (see point S in fig. 4B.2). Unless the smaller country is capable of exercising its monopolistic (monopsonistic) power, the gain from the tariff is larger if the smaller country occupies some space in the world economy (see point M).

Now we can relax our two-country assumption. Suppose there are one hegemon and n smaller countries. Figure 4B.3 illustrates the case with $n = 2$. Since

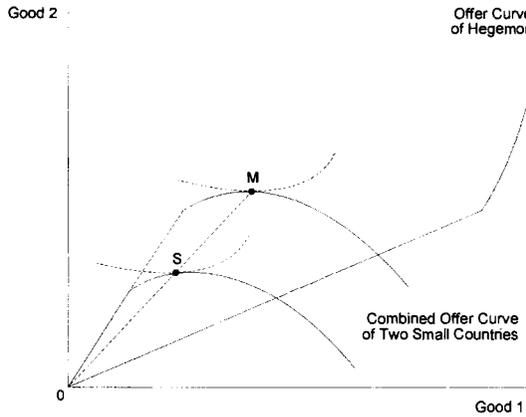


Fig. 4B.3 Offer curves of hegemon and many small countries

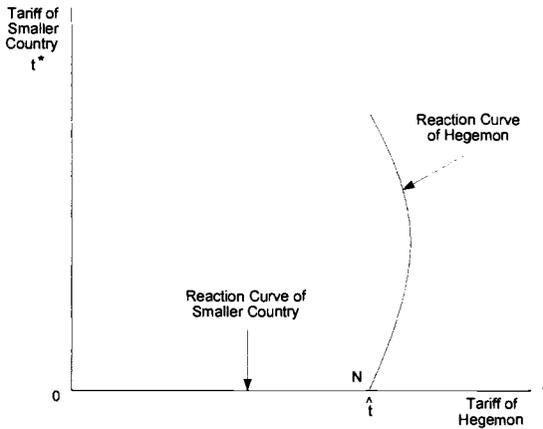


Fig. 4B.4 Reaction curves of hegemon and small country

there is no incentive for smaller countries to become Stackelberg leaders as long as they cannot change the terms of trade offered by the hegemon, the same point M will be enjoyed by the hegemon, and the smaller countries are both left at point S .

We can depict the strategic situation by reaction curves in the space of the tariff rate of the hegemon t and that of the smaller country (or countries) t^* (fig. 4B.4). In this Ricardian situation the reaction curve of the smaller country (or countries) coincides with the horizontal axis. The reaction curve of the hegemon starts with the optimal tariff \hat{t} in the absence of retaliation upward. Therefore the Nash solution N is the combination $(\hat{t}, 0)$, which coincides with

the Stackelberg solution with the hegemon as the leader. The smaller country (or countries) does not have any incentive to be a leader.

We all know that when the two (or more than two) countries are of similar size, then more complex situations emerge in which a tariff imposed by one country triggers retaliation by the other, and in which each country strives to be a Stackelberg leader.

In our model with a hegemon and a small country (or small countries), the implication of the sizes of countries is obvious. In short, in trade of goods situation with tariffs as instruments, the hegemon has the capability to manipulate the terms of trade to its advantage. In the Heckscher-Ohlin model with variable factor proportion, there is no longer a linear segment in the offer curve. However, since the large country has an almost linear segment, our results will apply without significant modification.

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Comment Tamim Bayoumi

This paper deals with the important issue of how Asian countries should respond to the formation of large free trade zones in Europe (the European Union) and North America (NAFTA). As the title suggests, the approach taken is to look at the incentives of the various participants, and to use this to analyze the optimal Asian response to these initiatives.

The workhorse of the paper is the model of trade with increasing returns to scale. Some intellectual history may be useful. In an extremely elegant paper, Krugman (1991a) analyzed the implications of free trade areas by looking at how welfare changed as the world was divided into symmetric free trade zones. He found that the lowest level of welfare occurred when there were three zones, essentially because as the free trade zones became larger they gained more market power, and hence the optimal tariff that they were assumed to charge rose. The trade-diverting impact of these higher tariffs with the rest of the world generally dominated the trade-creating impact of lower tariffs within the free trade zones themselves, leading to lower welfare.

Goto and Hamada use the same basic model, but rather than looking at the impact of symmetric trade zones, they look at the implications of asymmetric behavior. In particular, they consider the impact on the rest of the world if a specific group of countries forms a free trade area. They find that the formation of the free trade area lowers welfare for the rest of the world even if the countries within the free trade area maintain their current level of tariffs, rather than exploiting their increased market power to raise external tariffs. In short, the very existence of the free trade area causes trade diversion, even if external tariffs remain unchanged. If they do raise tariffs, as the optimum tariff argument would imply, then the costs would certainly be higher, as is discussed in a following section of the paper.

I will limit my comments to two issues. The first has to do with a subsidiary

Table 4C.1 Trade Patterns in 1992

Korea	
Exports	59,823 billion won
GDP	240,392 billion won
Export ratio	24.9%
Percentage of exports going to U.S./Canada	26.4%
Percentage of exports going to EU	13.0%
Percentage of GDP going to U.S./Canada	6.6%
Percentage of GDP going to EU	3.2%
France	
Export ratio	17.8%
Percentage of GDP going to U.S./Canada	1.3%
Percentage of GDP going to Asia	1.3%
Canada	
Export ratio	23.6%
Percentage of GDP going to EU	1.7%
Percentage of GDP going to Asia	2.3%

result that Krugman also derived. Having shown in the first paper that three free trade blocs was the worst possible solution, he wrote another paper in which it was the best solution (Krugman 1991b)—thereby setting up what Frankel, Stein, and Wei (1993) characterized as the Krugman versus Krugman debate. The crucial difference is that in the second paper there were assumed to be three continents, and while the costs of transportation are low within these continents they are high between them. As a result, there is relatively little trade between continents, and hence forming free trade areas within the continents generates relatively little trade diversion. In this case, the benefits from the trade creation within a continent outweigh the losses from trade diversion with the rest of the world.

Even in this world, the experiment of Goto and Hamada in which one continent forms a free trade area and the other one does not would still generate a fall in welfare. However, the fall in welfare would be relatively small as there is not much trade to be diverted. A crucial factor in discussing the marginal impact of forming a free trade bloc on existing welfare is therefore intrabloc trade. Table 4C.1 shows some data on this. It measures the percentage of output in 1992 exported to other potential trade blocs for three broadly comparable countries, Korea, Canada, and France. Korea exports 6.6 percent of its output to North America (defined as the United States and Canada) and 3.2 percent to the European Union. By contrast, France sends 1.5 percent of its output to Asia (broadly defined to include Australia, New Zealand, and the Indian subcontinent) or to North America. Finally, Canada sends around 2 percent of its output to both Asia and the European Union.¹

1. While these are three specific economies, I am reasonably sure that the results are relatively general. See Sterne and Bayoumi (1993) for a more general analysis of intra- and interbloc trade in Europe, North America, and East Asia.

Hong Kong	0.29	0.28	0.05	0.31	1.00								
Singapore	-0.10	0.25	0.02	0.29	<u>0.63</u>	1.00							
Malaysia	-0.02	0.06	-0.03	0.35	<u>0.47</u>	<u>0.71</u>	1.00						
Indonesia	0.14	-0.03	-0.10	0.13	<u>0.53</u>	<u>0.55</u>	<u>0.52</u>	1.00					
Philippines	0.10	0.37	-0.11	-0.06	0.05	0.05	-0.03	0.03	1.00				
Australia	0.12	0.21	0.19	0.14	-0.16	-0.22	0.03	0.09	0.23	1.00			
New Zealand	0.01	0.19	-0.25	0.15	-0.12	0.13	-0.11	0.01	-0.06	-0.41	1.00		

C. The Americas

	US	Can	Mex	Col	Ven	Ecu	Per	Bra	Bol	Par	Uru	Arg	Chi
United States	1.00												
Canada	-0.47	1.00											
Mexico	-0.59	0.35	1.00										
Colombia	-0.02	0.05	0.25	1.00									
Venezuela	0.09	0.34	-0.42	0.15	1.00								
Ecuador	-0.02	0.37	0.27	0.20	0.36	1.00							
Peru	-0.40	0.05	0.37	0.07	0.10	0.28	1.00						
Brazil	0.24	0.13	-0.08	0.07	0.13	<u>0.40</u>	<u>0.38</u>	1.00					
Bolivia	-0.65	0.72	<u>0.65</u>	0.18	0.00	0.29	<u>0.54</u>	0.17	1.00				
Paraguay	-0.34	0.45	<u>0.37</u>	0.06	0.12	-0.07	<u>0.16</u>	0.22	<u>0.39</u>	1.00			
Uruguay	0.27	-0.31	-0.26	-0.35	0.05	-0.21	0.01	-0.06	-0.20	-0.08	1.00		
Argentina	-0.30	0.08	-0.18	0.10	0.27	-0.01	0.36	0.34	0.06	0.06	-0.48	1.00	
Chile	-0.18	0.03	0.23	0.09	-0.33	-0.41	0.19	-0.23	0.17	0.21	-0.33	0.21	1.00

Source: Bayoumi and Eichengreen (1994).

Note: Significant positive correlations are underlined.

An important asymmetry between the three regions of the world, therefore, appears to be in their patterns of trade. Asia is heavily dependent on trade with North America (and, to a lesser extent, with Europe) in a way that none of the other blocs are with each other. Clearly, Asia has considerably more to lose from trade diversion than the other two blocs, but the opposite is much less true. This explains the relative indifference in Europe and North America about moves to greater regional integration in Asia, compared with the concern within Asia about the European Union and NAFTA. Because North Americans and Europeans do not trade much outside of their own blocs, trade diversion is simply not a big issue.

Given this fact, I would be wary about the conclusions reached in the paper that it would benefit Asia to form its own free trade bloc in opposition to NAFTA and the European Union. Asia clearly has most to lose from the potential regionalization of trade, and resulting trade diversion, that such a strategy might generate. As it is best to include all of one's major trading partners within one free trade area in order to minimize the potential for welfare losses from trade diversion, I would have thought that APEC is currently a more logical regional choice for Asian nations. Of course, if Asia carries on growing at the very fast pace we have seen recently, intraregional trade is likely to continue to grow faster than trade with the rest of the world. However, given the very heavy dependence of many Asian nations on the North American market currently, I would be surprised if intra-Asian trade became sufficiently regional over the next few years to change the analysis significantly.

My second point has to do with one of the building blocks of the analysis, namely, the optimal tariff argument. Optimal tariffs have excellent theoretical credentials, but I find it very difficult to relate them to the world around me. They imply that large and important countries should have higher tariffs than small ones. Yet both Britain before 1914 and the United States since 1945 have been champions of free trade. Indeed, the very existence of a relatively free trading system seems to me to be a refutation of the importance of the optimal tariff argument. If large countries really were thirsting to raise tariffs against the rest of the world, then I very much doubt that Article 24 of the GATT would have stopped them. Rather, it appears generally to be smaller and less developed countries that have traditionally had high tariffs and many import restrictions, and the rich and large countries that have tried to prize markets open—sometimes irresponsibly, as the opium wars of the nineteenth century between Britain and China amply illustrate.

Why is there such a difference between theory and observation? The optimal tariff argument deals largely with the gains to consumption from trade. As the tariff rises, the terms of trade of the country improve, and consumers benefit. But another element in trade is that it opens producers to international competition. Successful countries are generally happy to face such competition as they believe that their products will be preferred. By contrast, many small countries believe that they have to protect their industries from foreign competitors in

order to stimulate domestic development. This, I believe, is the reason that the optimal tariff argument appears to fail in practice.

Finally, a word about long-term prospects for regional cooperation in Asia when its trade dependence on North America has diminished. The theory of optimum currency areas tells us that countries are most likely to form a currency union if their underlying disturbances are relatively similar, as in these circumstances the cost of losing the ability to run an independent monetary policy is smaller. A similar argument could be made that a free trade zone is easier to maintain if underlying disturbances are similar, as the likely cost of not being able to use tariff policy is lower. Such an argument would certainly fit the European Union. Bayoumi and Eichengreen (1994) analyzed the correlations of underlying disturbances across Europe, the Americas, and East Asia, reproduced as table 4C.2. Significant positive correlations are underlined. As one can see, there are few significant correlations in the Americas, but at least two groups of countries with highly correlated disturbances in East Asia. This suggests that in the long run, regional cooperation in Asia may prove to be more successful than such moves in the Americas.

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Comment Wontack Hong

It is difficult to agree on “the national interest.” It is, however, more difficult to agree on the precise definition of “free trade (area).” Nonhegemonic small countries may be more concerned about the *content* of free trade than *establishing* a free trade area itself.

Wontack Hong is professor of economics at Seoul University.

It is argued that since tariff strategy is restricted by GATT Article 24, countries may not be able to reach the optimal "size" of dominating union. However, since an optimal tariff has to include tariff-equivalent gray measures, GATT Article 24 itself may not be a real constraint on the size of a free trade area. Perhaps the optimal size of the party (country group) to be exploited may be the only principal constraint on the size of a dominating union (see the Monaco story). The optimum size of a free trade "gang" that is to exploit excluded outsiders (by imposing a higher tariff rate) has to be clearly defined.

The "emotional" attitude of Americans accusing the EAEC proposal of being racial or anti-Caucasian is criticized. The authors, however, use equally emotional expressions, such as "greedy" or "acquisitive."

There seems to be a gap or jump between what the Goto-Hamada model says and what the authors say about the real world. One can deduce from their model something like the following: (1) the larger a block, the higher the optimal tariff can be, and (2) there are incentives in establishing a countervailing free trade area to make two polar blocs. In analyzing the real world, however, they address the problem of whether it is better to create a countervailing block against the European Union and NAFTA, such as the East Asian Economic Caucus (EAEC), or to promote APEC (including EAEC and NAFTA within the block) against the European Union. Furthermore, such statements as "APEC might be better than EAEC if APEC can loosen the tightness of the NAFTA bloc" cannot be inferred from their model.

In many cases, for nonhegemonic small countries, the question is not whether to participate in an economic union, but how to say yes and mean no or how to sabotage coercion by a hegemonic country seeking leadership exploitation. One may argue that as far as nonhegemonic small countries are concerned, the worst possible multilateral solution (or free trade arrangement) would still be better than the best possible bilateral solution with a dominating country such as the United States. That is, the larger the scope of multilateralism (in terms of the number of countries involved), the less may be the exploitation by the leader country in any free trade arrangement. The smaller the number of countries included in a union, the greater may be the danger of exploitation by a (local) hegemonic country.

To nonhegemonic small countries, the World Trade Organization (WTO) arrangement might be the best possible one they can expect at this point in time. While pushing the WTO, the European Community established the European Union and the United States established NAFTA, apparently in order to make the WTO system less effective and to impose the so-called optimal tariff. It is very natural for Japan to push the countervailing EAEC through Mahathir (say, by telepathy) and also very natural for the United States to try to abort this hidden Japanese effort by having opposing coalitions like APEC. Since Japan ("at the moment") still cannot say no to the United States, it can only hope for the realization of the "optimistic view" described by Goto and Hamada (i.e., through the acquisitive attitude of the United States the tightness of

the NAFTA bloc may be broken while making APEC a loose integration). For other small economies in East Asia, the nightmarish situation is to decide whether to join EAEC or NAFTA in a final showdown (i.e., picking the lesser of the two evils). One solution for them might be the proper functioning of the WTO, and the alternative might be the proper functioning of APEC against the European Union, including both the United States and Japan in this Pacific union and hoping that such an APEC is a way to realize a truly free trading world under WTO. I wish Goto and Hamada would modify their model so as to amplify the aspects pointed out here—for example, the larger the number of countries involved in a free trade negotiation, the less might be the exploitation by the leader country.

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