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# 9 Overview

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## 9.1 Introduction

Until the postwar era, most-favored-nation (MFN) treatment was far from universal. The United States, for example, negotiated separate treaties governing trade with a large number of countries and, until the 1920s, differentiated preferences were the norm.<sup>1</sup> With the passage of the Reciprocal Trade Agreements Act in 1934, the United States shifted to an MFN policy for countries with whom a treaty was negotiated and, in the postwar years, strongly supported MFN through the General Agreement on Tariffs and Trade (GATT), explicitly rejecting preferential arrangements. Adoption of MFN implied the absence of discrimination among countries in tariff rates although, as Taussig noted, it is always possible to specify a tariff as specific as the one that was levied on milk originating from cows grazing at a height in excess of 15,000 feet for more than two months of the year. One can thus at least in principle often achieve geographic discrimination through a sufficiently pointed structure of tariffs.

With the notable exception of the European experience,<sup>2</sup> the first forty years

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1. Taussig (1931). Taussig reported the plethora of bilateral trading agreements—with individually specified tariff treatment—in the late 1800s and noted that their complexity gradually drove countries to consider more uniformity across countries. He dates the American move toward inclusion of MFNs in commercial treaties as starting in 1924.

2. The European Union (EU) began life as the European Common Market, with six founding members: Belgium, France, Germany, Italy, Luxembourg, and the Netherlands. It expanded to twelve members as Denmark, Greece, Ireland, Portugal, Spain, and the United Kingdom acceded in the 1970s and 1980s. During that period, it was also renamed the European Community. In the 1990s the name once again changed, to European Union, to connote the move toward a “single market.” Additional countries (including Austria, Sweden, the Czech Republic, Poland, and Hun-

of the postwar era were marked by trade liberalization in a multilateral context. Such preferential arrangements as there were (East African Common Market, Latin American Free Trade Association, and so on) were either disbanded or largely ineffectual, again with the notable exception of the European Union (EU). Even Commonwealth preferences were abandoned as Britain joined the European Common Market.

The EU itself seemed “different.” First and most important, integration of the European economies took place, at least through the 1970s, in the context of liberalization of trade with the rest of the world. Second, motives for European integration seemed more political than economic (“strategic” in Whalley’s words); several EU “crises” would most likely have resulted in the dissolution of the arrangement had it not been for overriding political concerns. Third, the direction of the EU was clearly toward much greater integration than a preferential trading arrangement (PTA) alone would have implied.

The initial proposals for a European Common Market spurred considerable thought regarding PTAs in the 1940s and 1950s. Out of that literature, which included most prominently Meade (1953) and Viner (1950),<sup>3</sup> came the classic distinction between trade creation and trade diversion, which has been in one way or another central to the analysis of the effects of PTAs ever since.

For, while the initial instinct of economists and others was to assume that formation of a PTA meant the lowering of trade barriers and must therefore be a movement toward freer trade and hence welfare-enhancing, the Vinerian distinction between trade creation and trade diversion vividly demonstrated that analysis of PTAs was in the domain of second best. That is, comparison is not between a first-best policy (free trade, in the absence of monopoly power in trade<sup>4</sup>) and a policy in which first-best conditions are violated, but between two policies in each of which first-best conditions are violated but in different ways.

Whereas first-best policy is for the domestic marginal rates of transformation (DMRTs) among commodities to equal the international marginal rates of transformation (IMRTs), a country entering a PTA is typically moving from a situation in which DMRTs are unequal to the IMRTs (because of the presence of tariffs pre-PTA) to a situation in which the DMRTs become equal to the

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gary) are now seeking membership. In partial reaction to the Common Market, a European Free Trade Association (EFTA) was formed among a number of countries (including the United Kingdom and others who subsequently joined the EU). EFTA countries entered into free trade agreements with each other, and had free trade in manufactured goods with the countries in the EU. I shall use the term European Union (EU) when reference is to current practices or practices that still continue. When reference is to a specific time in the past, I shall use the name applicable at the time.

3. See Lipsey (1960) for a survey of the literature to that date.

4. Unless there is a divergence between domestic and international marginal rates of transformation, free trade is always a first-best policy for a country: domestic distortions in a first-best world are corrected through the appropriate domestic interventions. From a global perspective, of course, free trade is optimal even when individual countries have monopoly power in trade.

marginal rates of transformation in some trading partners, but where the marginal rates of transformation in those trading partners are then unequal to those in other countries. The distortion is moved from the domestic border vis-à-vis all other countries to the domestic border and PTA partner countries vis-à-vis all other countries, and there is no a priori means for specifying which distortion is closer or farther from a Pareto-optimal outcome. As a result, trade may be diverted from low-cost sources (outside the PTA) to higher-cost sources (within the PTA), or it may be created, as sources shift from high-cost domestic production to lower-cost PTA-partner production.<sup>5</sup>

After the initial spurt of interest in PTAs in the 1950s, the apparent ascendancy of the multilateral system over PTAs led to a loss of interest in the latter, and economists' research focused almost entirely on issues associated with individual countries' trade policies vis-à-vis the world economy or with the properties of the open multilateral system itself. Analysis of PTAs was a virtually forgotten domain.

In the 1980s and 1990s, however, PTAs have once again been ascending in importance (see WTO 1995). In 1982, the United States formally renounced its earlier support for the multilateral system to the exclusion of PTAs and stated that it would welcome PTAs with "like-minded" countries seeking to go beyond GATT in removing barriers to trade between them.<sup>6</sup> It followed up with free trade arrangements (FTAs) negotiated with Israel, Canada (the Canada-U.S. Free Trade Agreement), and then with Canada and Mexico (North American Free Trade Agreement [NAFTA]). It is already the stated intent of the group of countries associated in the Asia-Pacific Economic Cooperation group (APEC) to form a region of free trade by the year 2010 for developed countries and 2020 for less developed countries.<sup>7</sup> The countries of the Western Hemisphere likewise declared their intent of reaching a hemisphere-wide FTA. Some countries have indicated their intent to join more than one preferential grouping.<sup>8</sup> Immediate challenges for the EU relate to the applications for entry of a variety of countries to the east and south of the existing borders. In the

5. Note, however, that lower-cost partner production need not be the low-cost world source. Trade creation may enhance welfare, but may nonetheless be Pareto-inferior to multilateral free trade. Once a PTA has been formed, those producers gaining through trade creation in either partner country may become opponents of multilateral liberalization in order to avoid losing their PTA-induced markets.

6. The first departure from MFN for the United States for members of GATT was the acceptance (after much resistance) of the Generalized System of Preferences for developing countries, which was authorized under GATT. Even before the official announcement of the "two-track" policy in the early 1980s, however, the United States unilaterally extended preferences to countries eligible for the Caribbean Basin Initiative.

7. The APEC wording is ambiguous as to whether the countries in the region intend to practice global free trade by the years specified or whether they contemplate a PTA in the region.

8. The United States itself would be in the Western Hemisphere Free Trade Association (the presumed successor to NAFTA) and the APEC grouping. Chile is negotiating for entry into NAFTA, already has an FTA with some Latin American countries including Mexico, is in APEC, and is seeking an FTA with the EU.

somewhat more distant future, the United States and EU have officially expressed an interest in the formation of the Trans-Atlantic Free Trade Area (TAFTA).

In these circumstances, it is natural for economists to revisit the questions that arise out of PTAs, and the papers at this conference address some key aspects of those questions. Analysis is difficult for several reasons. In large part, this is because of the second-best aspect of PTAs. What we would ideally like to know is the level of economic efficiency (for the world as a whole and for individual trading nations) and welfare associated with worldwide free trade contrasted with that of individual nations under their existing tariffs, compared in turn with welfare under preferential arrangements. But even that very ambitious specification is not enough: to determine welfare under existing tariffs, is it legitimate to compare a country's tariff situation with that under free trade, assuming that other countries retain their existing tariff structure? Or should it instead be recognized that if, for example, India went to free trade, there might follow some adjustment of tariffs in other countries? And, as if these questions were not difficult enough, questions arise as to the determinants of tariff levels under preferential arrangements contrasted with the determinants of tariffs of individual countries.<sup>9</sup>

Moreover, given that global free trade represents a Pareto optimum from the viewpoint of the world as a whole,<sup>10</sup> determinants of tariff structures remain a puzzle to economists. Moreover, a central question is whether formation of PTAs is conducive to leading the world closer to multilateral free trade or, instead, is likely to lead to larger trade barriers between PTA groupings as trade barriers within PTAs are dismantled. Indeed, in an important sense, the extent to which formation of PTAs is conducive to further liberalization of world trade in the future is *the* key question for analysts.

Even if we did have an accepted theory of the political economy of tariff determination, we would still need a theory and methodology for estimating what bilateral trade flows would be under each of the hypothesized circumstances. Whereas theory offers a good guide at least to the economic cost of a tariff or the tariff equivalent of other trade barriers, there is little in theory to help in ascertaining what "optimal" bilateral trade flows are.

9. An interesting set of questions is which countries might gain by aligning themselves with which trading partners in any preferential arrangement.

10. One of the difficult questions that has not been satisfactorily addressed in the literature on the political economy of trade policy is why compensation mechanisms cannot be created between countries (and, for that matter, within countries that lack monopoly power in trade) so that free trade is a reality. After all, even if there is monopoly power in trade, the rest of the world could afford to bribe the monopolist to practice free trade, leaving both the monopolist and the rest of the world better off. In light of Becker's argument (1983) that wealth transfers will be effected in the cheapest possible way, this puzzle compels attention. None of the papers at this conference (or elsewhere, to my knowledge) seriously addresses this issue, so it is ignored here.

## 9.2 Motives for Forming Preferential Trading Arrangements

The papers at this conference all represent significant steps forward in addressing these questions. John Whalley addresses two of the key questions: the welfare costs that might be associated with a world of PTAs with large trade barriers between groupings, and the motives for small countries in entering PTAs. He notes that there are a variety of motives for forming PTAs, and then develops a model in which small countries need to defend themselves against potential losses should large countries with monopoly power in trade exercise that power by forming trading blocs and imposing optimal tariffs. To examine this question, Whalley formulates a computable general equilibrium model, following Krugman (1991) in assuming that individual nations in the absence of PTAs and trading blocs levy optimal tariffs on each other. Assuming that countries levy optimal tariffs provides an analytical framework within which tariff levels can be endogenously determined and, as such, has a great deal to be said for it. Whalley's estimates of the magnitudes of potential gains (resulting from terms of trade changes) are interesting and useful.

A first part of the exercise examines the welfare impact of individual countries' and groups of countries' impositions of optimal tariffs. One of the fears about PTAs has been that they might ultimately result in the division of the world into trading blocs: as trade relations become more and more open among PTA members, it is possible that barriers to trade with the outside increase. Whalley's model provides a basis for estimating how large the gains and losses under such a scenario might be.

In Whalley's model, since large countries have most monopoly power in trade, they lose if they are bound under a PTA not to use that power against their PTA partners. Small countries, however, seek insurance against the eventuality of the exercise of monopoly power by large countries, which is their motive for entering a PTA with a large country. This, in turn, implies that large countries should receive a static benefit from PTA membership to offset the costs of forgone future monopoly power against them.

Because of the complexity of Whalley's model, there are some key simplifying assumptions and estimates to which the results are highly sensitive.<sup>11</sup> The numbers need, therefore, to be taken as a first approximation. In a country-specific model of optimum-tariff-ridden Nash equilibrium, for example, Whalley's estimates suggest that the United States and Europe would come out as net gainers (1.2 percent and 3.7 percent of national income, respectively) while Japan would emerge a loser (5.2 percent of income).<sup>12</sup> But the really big losers

11. Chief among these appear to be the two-good assumption with each region producing only one good for export and importing the other good, and the use of Armington elasticities. These latter clearly drive the estimates in an optimal-tariff and retaliation framework.

12. That the elasticities may be suspect is illustrated by examination of Whalley's individual numbers. For example, in a postretaliation equilibrium, U.S. tariffs against the EU product is over

are the smaller countries, as illustrated by the estimated losses of 25.5 percent and 8.5 percent for Canada and Mexico, respectively, if they were to go into a tariff war alone. The rest of the world is estimated to suffer a welfare loss equivalent to 10.6 percent of national income.

The rest of the world, consisting of unaligned countries sufficiently small so that they cannot individually affect their terms of trade, has the most to lose if the world divides into trading blocs. As such, small countries may feel impelled to align themselves with large countries (as Canada and Chile) in order to avoid being left out. This is an important insight, and one that probably follows even if PTAs do not precisely formulate optimal tariffs.<sup>13</sup>

One must, however, question the assumption that optimal tariffs would be formulated when countries setting their individual tariffs have set tariff rates far below the estimated optimum in the Whalley model. To be sure, this raises the issue of the role of GATT/WTO (World Trade Organization) in determining or constraining tariff levels, which in turn is a function of the extent to which PTAs are a step toward multilateral liberalization or instead represent a move toward trading blocs with relatively high walls of protection between them.

In discussions of the EU, NAFTA, and other regional arrangements, one question has been whether there is anything special about regional PTAs, as contrasted with PTAs among geographically dispersed countries. Spilimbergo and Stein address the welfare effects of PTAs when factor endowments, variety, and transport costs all influence trade flows. They consider countries producing agricultural goods (subject to constant returns to scale) and manufactures (in which variety is important), and examine possible PTAs in light of relative factor endowments (rich countries are assumed to have relatively more resources in manufactures because they are relatively well endowed with capital) and transport costs.

Not surprisingly, they find that, the more weight attached to product variety, the greater the gains from forming a PTA among rich countries (that produce varietal goods). This leaves open, of course, the question of why rich countries would impose tariffs on the importation of varietal goods from other rich countries and not resort unilaterally to zero tariffs for these items. In their model, when trade is predominantly comparative-advantage-based, the welfare benefits to rich countries from forming a PTA with a poor country increase and

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400 percent and the EU tariff against the American product is over 900 percent. This results in a shrinkage of trade volumes to 5 percent or less of initial trade flows. It is difficult to believe that the gains from improved terms of trade could offset losses in the quantity of trade of this magnitude without extraordinarily small (in absolute value) elasticities of demand. It may be noted that Whalley's estimated optimal tariff postretaliation for the United States is over 400 percent for all regions, while that of the EU is over 800 percent.

13. The model also has interesting insights to the sequence in which bargaining with respect to entry into a PTA takes place. Clearly, in Whalley's model small countries are better off bargaining jointly for a PTA than they are bargaining sequentially, as they must give up less to the large country to obtain insurance. However, the last to enter a sequential bargain may be better off than the first, as Whalley finds that Canada would have been better off to bargain after Mexico (because of Mexico's larger size).

those associated with a PTA among rich countries diminish. Spilimbergo and Stein also find that poor countries will always be better off integrating with a rich country, and will always be worse off when entirely left out of any trading bloc. Finally, in the absence of transport costs, their model yields the result that consolidation of the world into a few PTAs would result in reduced welfare.

They then turn to the role of distance in the formation of PTAs. Earlier, Krugman (1991) and Summers (1991) had pointed to “natural trading partners” as being geographically proximate. They then argued that the formation of PTAs was likely to be beneficial. Spilimbergo and Stein attempt to test this in the context of their model by adding distance and transport costs explicitly. Adding transport costs is similar to increasing the importance of comparative-advantage-based trade (because of the lower elasticity of substitution among such goods than among varieties of the same product).

They use this framework to simulate several possible PTA scenarios. In an interesting one, they examine whether Chile would be better off in NAFTA or in Mercosur: the latter would dominate only if transport costs were very high (which would greatly reduce the potential trade between Chile and northern members of NAFTA). In general, as transport costs increase, the welfare gains from regional PTAs increase, and, in the limit as transport costs become prohibitive, regional PTAs capture all the potential gains from trade with no further gains accruing from a multilateral trading system.

Spilimbergo and Stein’s results provoke a number of questions. If, as their model indicates and as seems reasonable, the gains to multilateral trade increase as transport costs fall, why should regional PTAs emerge in the 1990s when transport costs are far lower than they were several decades ago? Why, too, should resistance in developed countries to PTAs between developed and developing countries appear to be so much greater than to PTAs between developed countries if, as their model suggests, welfare gains to developed countries are greater in the latter case? Does this suggest the predominance of comparative-advantage-based trade?

The conclusions of the Whalley and the Spilimbergo-Stein models point to the centrality of the determinants of the structure of protection pre- and post-FTA. Those issues, in turn, divide into the political economy of tariff determination and into the determinants of the form (FTA or customs union) of PTA. These issues are dealt with in part of the paper by Frankel and Wei.<sup>14</sup> Turning first to tariff determination, they consider the optimal tariff case, covered by Whalley, and political-economy models where other considerations are involved. Trade diversion resulting from a customs union or free trade area, for example, is likely to lead to more opposition to multilateral trade liberalization because those benefiting from the PTA would lose their gains to third countries in a multilateral framework. This is the outcome, for example, of the

14. Whalley also has some results pertaining to differences between FTAs and customs unions in the context of his model.

Grossman-Helpman (1995) median voter model, and also Levy's model (forthcoming) in which support for trade liberalization arises from increased varietal trade while opposition emerges when trade is factor-endowment-based. Once a PTA has been formed, support for further trade liberalization is diminished, as part of the variety-based gains from trade are already achieved.

A critical question in the "stumbling bloc or building bloc?" analysis focuses on the terms on which new members may accede to the PTA. If any country seeking membership may join,<sup>15</sup> an attractive PTA could eventually include all countries as members and thus automatically transform into multilateral liberalization. However, issues arise if blocs form for motives such as those suggested by Whalley. For, as new members seek to join, the gains to the original members diminish. At some point, it is likely (and inevitable in some models) that further membership will diminish welfare and PTAs would then, if maximizing their individual welfare, refuse further members.

However, there are also mechanisms by which PTAs may increase support for multilateral trade liberalization. These include the locking-in of trade opening (as exemplified by Mexico), the ability of governments to insulate themselves more from protectionist pressures under a PTA than unilaterally, and the efficiency of negotiating with larger units such as the EU rather than with 100+ individual countries.

Frankel and Wei also sketch their own model, in which a single move to multilateral free trade would be opposed by workers in two of three industries (each of which employs an equal number of workers), but in which a move to an FTA would arouse opposition only from those in one of the two industries (as the FTA partner is not a threat in one industry and the price of the second imported product might be lower). Once the PTA is in place, however, workers in the industry that already faced import competition from the PTA partner will, along with those in the export industry, support a further move to multilateral free trade.

While this sequence would lead to further trade liberalization,<sup>16</sup> that is not inevitable, as Frankel and Wei recognize. If sufficient trade diversion occurs under a PTA, it could result in a majority's blocking further multilateral liberalization, even in circumstances where an initial majority might have supported it.

In this regard, nothing in economic theory suggests that preferences should be either 100 percent or zero. Indeed, the economic logic of trade creation and trade diversion suggests that partial preferences might be optimal, although GATT/WTO rules permit PTAs only when preferences are 100 percent. It has been suggested, however, that keeping preferential arrangements within low

15. As noted by Frankel and Wei, a number of models have been developed in which nonmember countries do find it in their interest to join a PTA.

16. Other arguments that an PTA would lead to further liberalization have not been modeled. It has been argued, for example, that firms that are not currently trading internationally may gain experience in a regional PTA that will then reduce their fears of further trade opening.

limits (22 percent reduction below multilateral tariffs is the number reported in Frankel-Wei from Stein) would maintain incentives for PTAs to accept new members, or to move to multilateral free trade.

There are also contrasts between customs unions and FTAs, and the choice may be based on political-economy considerations. FTAs may be more amenable to capture by special-interest groups, through exploitation of rules of origin. Accession of new members to an FTA will be more difficult and less automatic than under a customs union, because differences in external tariffs will drive negotiations over rules of origin applicable to the new member in an FTA, and not in a customs union where the external tariff is given. Frankel and Wei also note that sectoral exclusions are far easier in FTAs than in customs unions (and are, at least in principle, illegal under WTO and GATT). However, FTAs may be more conducive to further multilateral trade liberalization, as there will be pressure on producers importing inputs into the higher-tariff countries to seek tariff reductions.

### 9.3 Empirical Evidence

The papers discussed so far have examined the welfare effects of PTAs, and have shed light on certain aspects of the issue, but also raise a number of questions, many of whose answers depend on the relative orders of magnitude of different effects. In light of these results, it is natural that considerable research efforts should go into empirical work, estimating quantitatively the effects of PTAs on trade flows.

Researchers attempting to understand bilateral trade flows early on turned to econometric estimates of the determinants of trade, starting with a gravity model in which bilateral flows are a function of their size (as reflected by GDP and population) and the costs of transacting business between them (usually taken to be a function of distance). When interest turned to the effects of PTAs, dummy variables for the presence of PTAs were introduced into gravity models to test for the quantitative effects of preferential arrangements.

Before interest focused on the effects of PTAs, the gravity model was already found to do a good job of explaining bilateral trade flows, and economists began developing theories consistent with these models.<sup>17</sup> Deardorff's paper represents a contribution to the theoretical foundation for these models, showing that they are consistent with virtually any model of trade in which different countries specialize in different groups of commodities.<sup>18</sup> Deardorff starts by positing an international price vector, in response to which in the absence of transport costs countries' production takes place. Demands (at the

17. See Deardorff's paper for a brief overview of the evolution of the literature.

18. If two countries specialized in precisely the same commodities, of course, they would not export to each other. In Deardorff's model, however, there are no transport costs, and domestic production is treated as being thrown on the world market and then randomly assigned to importing countries, including the producer.

same international price vector) from each country are then randomly matched by supplies and, since transport costs don't matter, a home country's buyers of the good it exports may nonetheless satisfy their demands from a foreign source while the country's exports are greater than domestic production less domestic demand.

Deardorff then proceeds to introduce transport costs, which insure that factor price equalization will not obtain, and, in a world with many more commodities than countries, he argues that it is likely that most goods will be supplied by only one country. In that circumstance, a gravity equation for bilateral trade flows would be justified even in a Heckscher-Ohlin world. Thus, the gravity model would appear to be consistent with virtually any trade model in which specialization obtains.

Frankel and Wei use a gravity-model specification in their paper and augment it with a number of variables that can plausibly be thought to influence bilateral trade flows. These include distance between each pair of countries (which may influence not only transport costs but interest charges and other user costs), contiguous borders, and a common language between a pair of countries. They then add dummy variables for regional groupings. They estimate the model using data for sixty-three countries (which gives 1,953 bilateral trade observations), for four years between 1970 and 1992.

Frankel and Wei's data show that the "affinity" variables are significant and that there are intraregional trade biases. Western European countries are estimated to have traded 17 percent more than the unaugmented model would have predicted, and the trade of Western Hemisphere countries, APEC, and the Association of Southeast Asian Nations (ASEAN) was about 40, 215, and 145 percent higher than predicted.

But they then proceed to examine the extent to which intraregional trade was higher because the pair of countries in question traded more overall, and were thus more open than average, as contrasted with a circumstance in which greater trade between a country pair might arise at the expense of third countries (outside the PTA). The Western European and East Asian groups were found to have such high coefficients because they were trading more overall, relative to their size. An East Asian country, for example, traded about twice as much with a country outside the region than two random countries outside East Asia even after account was taken of distance and the other variables mentioned above. Frankel and Wei interpret these results to imply that intraregional trade in East Asia and Western Europe has not grown at the expense of trade with third countries, and thus has been predominantly trade-creating.

Interestingly, both APEC and the Western Hemisphere countries trade less than predicted; once that is taken into account, the larger-than-predicted trade within each group is taken as a sign of trade diversion. As a next step, Frankel and Wei take into account the trend over time in "openness" and in greater-than-predicted intraregional trade. In the Western European case, countries were trading more outside the region than predicted in 1970, and gradually shifted toward more trade within the region; by the end of the period, their

extra-European trade was still larger than predicted, but less so than it had been in earlier years.

When Frankel and Wei turn to formal regional groupings, they find that the EC, Mercosur, and ASEAN all exhibited “openness” in the sense defined above. By contrast, the European Free Trade Association (EFTA) and NAFTA show evidence of trade diversion. Their interpretation is that most countries that choose to liberalize their trade with neighbors are also more able to liberalize internationally, but that either result can happen.

Finally, Frankel and Wei investigate the extent to which currency blocs and currency stability seem to follow regional trading blocs and to influence the volume of trade between country pairs. They find evidence of a European currency bloc (around the mark) and a dollar bloc in the Pacific, with no evidence of a yen bloc. They also find some evidence supporting the view that exchange rate volatility has suppressed trade flows.

Frankel, Stein, and Wei obtain yet further results with the gravity model. They include many of the same variables as in Frankel and Wei and add a number of variables such as per capita income levels to reflect the “affinity” between countries. They then estimate their model with data for sixty-three countries (1,953 bilateral trade observations) for three years, 1970, 1980, and 1990.

In this paper, they are concerned with the importance of “affinity” variables and again focus on the extent to which trade flows deviate from predicted levels because of these and other factors. Western European countries are estimated to have traded 36 percent more than the unaugmented gravity model would have predicted.

They then examine the extent to which intraregional trade was higher because the pair of countries in question was more open than average, as well as trends in intraregional trade in these regions over time. Intra-EU trade increases over time, but not at a statistically significant rate once the other variables are taken into account. Intra-Asian trade is high, but shows no trend. Frankel, Stein, and Wei interpret these results to imply that intraregional trade grew rapidly, and then turn to the question of whether the growth was trade-creating or at the expense of trade with the rest of the world.

They augment their model with transport costs and imperfect competition, and show that for reasonable values of the transport parameter, regional preferential groupings are welfare-improving contrasted with geographically removed partner preferences. However, overall they conclude that the extent of preferences among regional partners has probably significantly exceeded the optimal amount.

The improved theoretical grounding for gravity models provided by Deardorff and the fact that Frankel and Wei, and Frankel, Stein, and Wei, can obtain such significant and interpretable relationships between the gravity-equation dummy variables appears to lend credence to the use of these techniques for interpretation of the impact of PTAs and other variables of interest.

Eichengreen and Irwin, however, implicitly challenge the gravity model and

its results. They note, first, that intraregional flows are higher than predicted before, as well as when, a PTA is in force. Second, they point to a number of reasons why "history should matter." That it should matter has been demonstrated in the hysteresis literature: once an exporter has developed a distribution network in another country, he is likely to continue using it unless there is a large decrease in profitability. There can be several reasons for this. It may be because fixed costs are sunk and only variable costs need be covered; it may result simply from acquaintance with the market. To be sure, exogenous events such as war or depression may significantly shift historical trading patterns, but Eichengreen and Irwin expect the influence of historical trading ties to be important much of the time.

Eichengreen and Irwin note that failure to include lagged variables in a gravity model will significantly bias estimates of effects of PTAs if PTAs are formed among countries with unusually close trading ties pre-PTA. That there might be unusually strong motivation to form a PTA with countries with which there are unusually strong trade ties seems plausible. Eichengreen and Irwin point to the possibility that countries might form a PTA to insulate their trade with important trading partners from shocks.

Eichengreen and Irwin use their data set (thirty-four countries for 1928 and 1938; thirty-eight countries for 1949, 1954, and 1964) to examine whether "history matters." They test the extent to which deviations of trade patterns from the straightforward gravity predictions in one period are explained at least in part by deviations in preceding periods.

In their specification, the usual gravity-model variables are significant and surprisingly stable for the various years for which they provide estimates. When they add lagged trade as another variable, however, the magnitude of coefficients on current incomes and distance is reduced. Trade in 1949 (after the disruption of the Second World War) is significantly influenced by trade patterns in 1928 and 1938, with 1938 trade being twice as important as 1928 trade. By 1964, however, the impact of prewar trade patterns has disappeared.

One interesting result that arises from their specification is that, despite the smaller estimated "direct" income coefficients in their equations, one can estimate a "long-run" elasticity of trade with respect to income, taking into account, for example, the effect on trade in 1954 of additional income in 1949 when it is recognized that the increased trade in 1949 increases trade in 1954. These estimated "long-run" trade elasticities are higher than those obtained in a gravity model without lagged variables.

Having estimated their model and demonstrated the importance of lagged variables, Eichengreen and Irwin then proceed to introduce dummy variables: a first dummy variable is when both countries are members of the same PTA, a second when only one country is. The coefficient on the first dummy, if positive, would indicate positive trade creation between the PTA partners; the second, if negative, would indicate trade diversion from third countries.

There are a number of interesting findings: GATT members traded more

with one another (positive first dummy) than predicted in 1949 after the conclusion of the first round of multilateral tariff reductions, but this effect had disappeared by the 1950s.<sup>19</sup> Countries that had been British colonies traded more with Britain and less with the rest of the world in 1949 than predicted; by the 1950s, however, these countries traded less with the rest of the world and no more than predicted with Britain.

Eichengreen and Irwin's demonstration that history does indeed matter is convincing. Nonetheless, it raises the question of whether history itself, or some characteristics of trading partners that are correlated over time, are the variables yielding their results. Interestingly, none of the discussion of gravity models in the conference explicitly addressed the role of trade barriers in influencing bilateral flows. Although the presence of a regional arrangement implicitly represents the absence (or at least the greatly reduced presence) of trade barriers, one would anticipate that the average height of protection of PTA members toward trade with nonpartners would be a significant variable. Perhaps for lack of the requisite data, such a specification has not been attempted.

Nonetheless, a number of findings suggest that variables with serial correlation may be at work. Commonwealth preferences, after all, were extended for a long time and reflected lower trade barriers among Commonwealth countries than between those countries and other trading partners. Likewise, the high coefficients found on openness in East Asia and Western Europe both in Frankel and Wei and in Eichengreen and Irwin may reflect the fact that the countries in those groupings had relatively low external trade barriers. By contrast, most countries in the Western Hemisphere (with the exception of the United States) had relatively high trade barriers for the periods covered by the various data sets, and trade among Western Hemisphere countries may have been less than average for the world over several time periods for that reason. The same phenomenon may have been at work in the ASEAN region. Certainly, if one estimated the average tariff equivalent of trade barriers for the postwar years included in the two studies, it seems clear that Europe, the United States, and probably Japan after 1970 had lower trade barriers in general than did other countries of Asia, all of Latin America, the Middle East, and Africa. All else equal, countries with higher trade barriers would be expected to trade less than countries with lower ones.

Other empirical aspects of PTAs are examined in chapters 7 and 8. Kowalczyk and Davis analyze intrabloc tariff reform, while Engel and Rogers examine the law of one price, and the difference borders (and regional groupings) make to its functioning.

Kowalczyk and Davis examine the time- and industry-specific patterns of phase-outs in regional PTAS in order to attempt to assess whether the pattern

19. To be sure, the fact that trade among GATT members had increased in 1949 influences the historical values used in the later regression estimates.

of phase-outs was welfare improving (if higher tariffs were reduced sooner) or not (if tariff dispersion increased during the phase-out period). In doing so, they are not examining trade creation versus trade diversion in the traditional sense, and are examining only the period of transition en route to full PTA status. They find that higher-duty imports into the United States tended to have longer tariff phase-out periods under NAFTA than did lower-duty items, but there was no similar pattern for Mexico. As discussed with respect to other papers, the absence of a satisfactory explanation of existing tariff levels forms a major difficulty in interpreting their results. The simplest explanation for the finding might be that industries in the United States with high tariffs are the ones that have the most political influence over bargaining processes, and that they were able to use that influence in NAFTA negotiations (to slow down phase-out) as they had earlier used it to obtain high tariffs.

But, as in all such analyses, the more fundamental question arises: how were U.S. and Mexican authorities able to set the agenda for NAFTA in such a way that only the timing of tariff phase-out could be affected? To be sure, rules of origin and other side measures were also used, but the fundamental proposition remains: the political power of various groups was seriously eroded once the commitment to NAFTA was made: all that could be done was to slow it down (through slow phase-outs) and to seek other protectionist devices (rules of origin) as partial replacements.

These considerations raise one important set of issues for research with which this conference did not deal: that is, the role of institutional arrangements in constraining the choices of various actors in seeking or granting protection. The papers assuming the use of optimal tariffs for PTAs did so on the implicit assumption that GATT/WTO rules would not apply (because tariffs are bound under WTO). Yet those rules have clearly been an important factor in the liberalization of the world economy over the past half century. Likewise, the existence of multilateral tariff negotiations under GATT enabled export interests in various countries to restrain politicians in granting protection to import-competing interests. In considering whether PTAs are likely to be conducive or a hindrance to further liberalization of the multilateral trading system, issues such as their role in tariff negotiating processes need to be considered.

Even more broadly, there are important questions as to the sorts of institutional design or constraints on PTAs (customs union only?) that would increase the likelihood of further liberalization multilaterally. While a cynic might respond that the level of protection is determined by national governments in their own self-interest, he would have to answer difficult questions as to why such governments enter into PTAs, and whether institutional arrangements might not be found that altered self-interest. But those issues constitute a research agenda for one or more conferences in the future.

Finally, Engel and Rogers examine deviations from the law of one price

between regions and across national borders. In an important sense, their methodology represents an alternative to gravity models as a mechanism for examining the effects of PTAs. In particular, they use observations of prices of commodities in different locations at the same point in time, and then attempt to estimate the determinants of price differences. They find that nominal exchange rate variability and distance both account for a significant portion of the failure of the law of one price to hold.

Further, they find that prices of the same commodity diverge more between regions (holding other variables constant) than they do within a regional (North America, EU) preferential grouping, but that divergence is not reduced within Asia. This tends to reinforce findings of others that Asia is less integrated as a region than is Western Europe.

Examination of price patterns is a valuable methodology for increasing our understanding of the role of borders and other factors in preventing the law of one price from obtaining. But, as Kenneth Froot noted in discussion, ascertaining what an identical commodity is is difficult. For example, goods sold in upscale shops differ from those sold in discount stores. Efforts to make price comparisons must confront the challenge that problems such as this present.

#### **9.4 Conclusions: What Have We Learned and What Do We Need to Know?**

The papers presented at this conference all add to knowledge and understanding concerning trade patterns in a world in which PTAs are formed. If one turns to the “big questions” posed at the beginning, one would have to conclude that, to date, the evidence is that PTAs have on balance more likely been trade-creating than trade-diverting. In part, this is probably a natural consequence of falling transport and communications costs and of the successive rounds of multilateral tariff reductions under GATT. After all, the lower the average level of protection, the less meaningful are tariff preferences.

The fact of multilateral trade liberalization meant that increased integration within PTAs (notably the EU) took place concurrently with increased openness of most economies. The evidence from the empirical research reported at this conference suggests that, for the most part, increasing regional integration was taking place, but at a faster rate than increasing global integration, which was nonetheless occurring.

For the future, a number of questions arise. Clearly, the long-term impact of PTAs depends on whether they are accompanied by continued multilateral liberalization or instead they substitute for it. Assessing the impact of PTAs on future multilateral trade relations is exceptionally difficult. In part, it depends on how influential the GATT institutional role is thought to have been in the past. It depends as well on the sorts of political-economy considerations discussed above, including especially the extent to which PTAs now in the process

of formation represent trade creation or trade diversion. Perhaps most important of all, it depends very much on the costs of disintegration of the world trading system into regional groupings along the lines discussed by Whalley.

On all of these issues, a great deal remains to be learned. Based on the evidence in this conference, however, there are at least weak grounds for optimism that PTAs may contribute to, rather than substitute for, continued multi-lateral trade liberalization.

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