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Chapter Author: Jeffrey A. Frankel, Shang-Jin Wei

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Regionalization of World Trade and Currencies: Economics and Politics

Jeffrey A. Frankel and Shang-Jin Wei

7.1 Introduction

A modern Pandora's box has been opened. Coming out are such creatures as free trade areas (FTAs), regional trading arrangements, and currency blocs. Regional blocs are an age-old phenomenon, but in their vibrant new incarnation they have spread to the corners of the world with unusual speed. Some believe that the box was opened by the Western Europeans when they consolidated their European Economic Community by the Single Market Initiative that took effect in 1992 and by the Maastricht Treaty. Others blame (or credit) the United States for the final lift when it signed a free trade agreement with Canada in 1988 and thereby abandoned its forty years of opposition in principle to regional initiatives.

Regardless of who is responsible, the important point is that the box is open. Three new members joined the European Community (EC), now the European Union (EU) in 1994, bringing the total to fifteen. After the North American Free Trade Agreement (NAFTA) expanded the U.S.-Canada FTA to include Mexico, Chile began negotiations to join as well. Four South American countries have formed their own customs union (Mercosur). Other countries in the region, rather than sitting idle, have dusted off their existing treaty to form an

Jeffrey A. Frankel is professor of economics at the University of California, Berkeley, and a research associate of the National Bureau of Economic Research, where he is also director of the program in International Finance and Macroeconomics. After this project was completed, he took leave to serve on the Council of Economic Advisers. Shang-Jin Wei is associate professor of public policy at the Kennedy School of Government, Harvard University, a faculty research fellow of the National Bureau of Economic Research, a research associate of the Center for Pacific Basin Monetary and Economic Studies of the Federal Reserve Bank of San Francisco, and a Davidson Institute Research Fellow at the University of Michigan Business School.

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Andean FTA. The Association of Southeast Asian Nations (ASEAN) countries in the Pacific also have decided to get serious about their FTA.

Opening the box created a controversy. There is no lack of economists and politicians who are excited about the new wave of regionalization and opportunities it has brought upon the world. Others, however, fear it may corrupt the fragile efforts of the General Agreement on Tariffs and Trade (GATT) or the World Trade Organization (WTO) to make progress toward global free trade.

Worries about regional blocs date back to the early 1950s, when Viner (1950) called economists' attention to the distinction between trade-creation and trade-diversion effects of regional FTAs. Specifically, trade diversion occurs when members of a grouping reorient their trade away from low-cost nonmember countries toward higher-cost member countries. Regional blocs may reduce world welfare if the trade-diversion effect dominates the trade-creation effect.

More recently, Krugman (1991a) derived a model in which every regional bloc pursues an optimal tariff. He showed via simulation that three regional blocs may minimize world welfare. In a generalized version of Krugman's model that includes transport costs, Frankel, Stein, and Wei (chap. 4 in this volume) show that even after one takes into account the geographic pattern of trading blocs, which can be seen to justify a certain degree of regional preferences as "natural," the current degree of regionalization is likely to be excessive, that is, welfare-reducing.

In this paper, we have several objectives. In the first half, we extend earlier econometric results to gauge the effects that regional economic arrangements have had on bilateral trading patterns. We map out the current pattern of regionalization using an updated data set covering 1970–92. We then present some estimates of the role that currency links within some major groupings might have played in promoting intragroup trade. In the second half of the paper, we consider welfare effects of regional arrangements. However, we go beyond the analysis in Frankel, Stein, and Wei (chap. 4 in this volume), by relaxing the assumption that tariffs maintained by FTA members against outsiders are exogenously set. We review various political-economy arguments that others have made regarding how regional initiatives might either undermine movement toward more general liberalization, or help build political support for it. In other words, trade blocs might be stumbling blocks or they might be building blocks. We present a simple model of our own that illustrates one possible beneficial effect of trade blocs as a political building block to further trade liberalization. We return to the gravity-model estimates to make a tentative assessment on which of the contrasting political-economy effects of regionalism, favorable or unfavorable, are likely to dominate. Our tentative verdict is favorable: those groupings, such as the EC and East Asia, that have increased trade disproportionately with each other, have at the same time increased trade with nonmembers.

7.2 Our Latest Estimates of the Regionalization of Trade with a Modified Gravity Model

Economists often say that inferences should be based on what people do rather than what people say. In terms of regionalization of trade blocs and currency blocs, there can be discrepancies between regional blocs on paper and trade and financial integration in reality. In history, there have been many formal proclamations of FTAs that have not been followed by full implementation. In the 1960s and 1970s, announced groupings that did not turn out to live up to their advanced billing included ASEAN, the Latin American Free Trade Area (LAFTA) and the Economic Community of West African States (ECOWAS, launched in 1975), among many others. There is often a failure to translate generalities into specifics, to keep to timetables, and to enforce agreements.

On the flip side of the coin, there are reasons to suspect that important *de facto* trade blocs can arise even in the absence of *de jure* trading arrangements. For example, it is often claimed that an implicit trade bloc (sometimes called a “yen bloc”) is forming in Asia and the Pacific, although the countries in the region have very few explicit preferential trade agreements.

7.2.1 A Modified Gravity Model

To estimate the effect of regional blocs on trade pattern, it is useful to have a framework that defines a “norm” of bilateral trade volume based on economic, geographic, and cultural factors. The gravity model is the framework that is most often used. Once the norm has been established, dummy variables can be used to check for biases, that is, for policies that member countries of a bloc may use to concentrate trade among themselves and away from the rest of the world.

In this paper, we estimate a modified version of the gravity model. To explain bilateral trade between a country and a specific trading partner, it incorporates the distance of each country from its average trading partner (which we call remoteness), in addition to the direct bilateral distance. This extension of the basic gravity formulation is based in part on a new formulation in Dear-dorff (chap. 1 in this volume). To our knowledge, this has not been done in the empirical literature. For an illustration of conventional gravity-model specification, readers are referred to the earlier papers.

Some other features distinguish the empirical estimation here from those in our earlier papers. First, the dependent variable here is country *i*'s exports to country *j*, rather than their total trade (exports plus imports). This allows one to estimate different income elasticities for exports and imports. Second, we examine groups that have (eventually) agreed to a formal regional trading arrangement, such as the EC or Mercosur, rather than continent-based groupings that may not have had an explicit preferential agreement. Third, we update the data to cover 1970–92.

A representative specification is

$$\begin{aligned}
 \log(\text{Export}_{ij}) = & \alpha + \beta_1 \log(\text{GNP}_i) + \beta_2 \log(\text{GNP}_j) \\
 & + \beta_3 \log(\text{GNP/pop}_i) + \beta_4 \log(\text{GNP/pop}_j) \\
 & + \beta_5 \log(\text{Distance}_{ij}) \\
 (1) \quad & + \beta_6 \log(\text{Overall Distance}_i) \\
 & + \beta_7 \log(\text{Overall Distance}_j) \\
 & + \beta_8 (\text{ADJACENCY}) + \beta_9 (\text{LANGUAGE}) \\
 & + \gamma_1 (\text{EC}_{I_{ij}}) + \gamma_2 (\text{MERCOSUR}_{I_{ij}}) \\
 & + \gamma_3 (\text{ASEAN}_{I_{ij}}) + u_{ij}.
 \end{aligned}$$

The *GNPs* and bilateral distance are standard gravity variables. Per capita *GNPs*, an *ADJACENCY* dummy for country pairs sharing a common land border, and a *LANGUAGE* dummy for countries with linguistic or colonial ties have been found to be useful in previous work.

The remoteness, or “overall distance,” variable measures how far an exporting (or importing) country is from all other countries. It is a measure of remoteness. An exporter’s remoteness is its average distance from its trading partners, using partners’ *GNPs* as the weights. An importer’s remoteness is defined analogously. The hypothesis is that the remoteness of an exporter from the rest of the world has a *positive* effect on trade volume. An example will illustrate the intuition. Assume that the distance between Australia and New Zealand is the same as the distance between Spain and Sweden. Spain and Sweden have lots of other natural trading partners close at hand, but Australia and New Zealand do not. One might thus expect the antipodean pair, who have less in the way of alternatives, to trade more with each other, holding other influences constant, than the European pair. The idea is that it is not just the absolute level of bilateral distance that matters, but also bilateral distance expressed *relative* to the distances of each of the pair from their *other* partners.

The last three explanatory factors are regional dummies. *EC* (European Community), *MERCOSUR* (customs union of the Southern Cone countries in South America), and *ASEAN* (Association of Southeast Asian Nations) are examples of the dummy variables we use when testing the effects of membership in a common regional grouping.

7.2.2 Data and Definition of the Regional Bloc Dummies

Our data set covers sixty-three countries (or, in principle, 3,906 exporter-importer pairs) for 1970, 1980, 1990, and 1992. The source is the United Nations trade matrix for 1970 and 1980, and the International Monetary Fund’s *Direction of Trade Statistics* for 1990 and 1992.

In this paper, we focus on six regional groupings that by the end of the sample have set up a preferential arrangement among member countries. They are the EC, European Free Trade Area (EFTA), Canada-U.S. FTA, Mercosur,

Andean Group, and ASEAN. Some blocs went into effect only toward the end of our sample. For example, the Andean Group was formally revived during 1989–90. Mercosur was established in spring 1991. In order to track the evolution of the trade pattern of these blocs, and to maintain comparability of coefficient estimates, we include the same set of regional dummies in every year. Hence, Mercosur dummy appears in regressions for 1970, 1980, and 1990, even though it had not yet come into existence. Similarly, we define the EC bloc as comprising twelve countries throughout our sample, even though the membership of the EC expanded three times during the sample (from six to nine in 1973, adding Greece in 1981, and adding Portugal and Spain in 1986).

Again for comparability of coefficient estimates, we restrict regressions on the subsample of the data for which observations for the same country pairs are available in each of the four years. As a result, we have 2,699 observations every year.

For every regional bloc, we define two dummies. For example, *ASEAN_I* takes the value of one for exports from one ASEAN member to another, and zero otherwise. *ASEAN_N* assumes the value of one for imports by any ASEAN member from any non-ASEAN member, and zero otherwise. The coefficient on *ASEAN_I* describes the degree to which ASEAN countries concentrate their trade among themselves beyond what can be expected from their economic and geographic characteristics. We call this “intra-ASEAN bias” for short. The coefficient on *ASEAN_N* reveals the extent to which ASEAN members may underimport or overimport from the rest of the world relative to the prediction of the gravity model. We call this “ASEAN’s extrabloc openness.”

7.2.3 Intradloc Bias and Extrabloc Openness

The basic results are reported in table 7.1. We first note that the conventional gravity variables behave very much the same way as the model predicts and as in our previous studies. The coefficients on exporters’ and importers’ GNPs are about 0.9 and statistically significant, indicating that larger economies trade more, but trade increases less than proportionally as GNP expands. Per capita GNP also has a positive and statistically significant coefficient: richer economies trade more. Bilateral distance has an economically and statistically large effect on trade: as distance increases by 1 percent, trade declines by 0.9 percent. The coefficient for *ADJACENCY* dummy shows that two countries with a common land border have a larger amount of trade than two otherwise identical countries, although the difference was not significant in 1970 and 1980. A common language or past colonial connection facilitates trade. In our estimates, this brings in 30 to 60 percent more trade than otherwise.

Of particular interest are the coefficient estimates on the remoteness variables. The coefficient on the exporter’s remoteness is always positive and, three out of four times, statistically significant. Other things equal, if country Z is farther from the rest of the world than country S by 1 percent, then Z’s exports to a common third country, say A, will be higher than that of S by 0.3–0.6

Table 7.1 Trade Blocs and Openness: Gravity Estimation with GNP-Weighted Relative Distance Measures

	1970	1980	1990	1992
Dependent Variable: log (Exports from <i>i</i> to <i>j</i>)				
GNP _{<i>i</i>}	.87* (.03)	.90* (.02)	.84* (.02)	.96* (.02)
GNP _{<i>j</i>}	.87* (.03)	.91* (.03)	.87* (.02)	.89* (.02)
Per capita GNP _{<i>i</i>}	.40* (.04)	.41* (.03)	.17* (.02)	.21* (.02)
Per capita GNP _{<i>j</i>}	.28* (.04)	.27* (.03)	.04 (.03)	.06* (.03)
Bilateral distance _{<i>ij</i>}	-.89* (.06)	-.82* (.05)	-.86* (.05)	-.93* (.05)
Remoteness of <i>i</i>	.40 (.13)	.28* (.12)	.64* (.10)	.33* (.10)
Remoteness of <i>j</i>	-.45* (.16)	-.83* (.14)	-.65* (.12)	-.52* (.13)
Adjacency	.13 (.21)	.04 (.19)	.54* (.16)	.42* (.16)
Language linkage	.34* (.10)	.53* (.09)	.35* (.08)	.59* (.08)
<i>EC</i> _{<i>N</i>}	.40* (.13)	.26* (.11)	.02 (.10)	.10 (.10)
<i>EC</i> _{<i>I</i>}	-.43* (.21)	-.35** (.19)	-.25 (.17)	-.29** (.16)
<i>EFTA</i> _{<i>N</i>}	-.18 (.16)	-.44* (.14)	-.86* (.13)	-.75* (.12)
<i>EFTA</i> _{<i>I</i>}	.21 (.42)	-.21 (.37)	-.36 (.33)	-.37 (.32)
<i>US-Canada</i> _{<i>N</i>}	-.46* (.22)	-.15* (.18)	-.08 (.16)	-.17 (.16)
<i>US-Canada</i> _{<i>I</i>}	-.77 (1.28)	-.28 (1.14)	-.44 (1.00)	-.73 (.98)
<i>MERCOSUR</i> _{<i>N</i>}	-.12 (.15)	.27 (.14)	.18 (.13)	-.21** (.12)
<i>MERCOSUR</i> _{<i>I</i>}	.86 (.54)	1.72* (.49)	2.09* (.43)	.78** (.42)
<i>Andean</i> _{<i>N</i>}	.14 (.15)	.21 (.14)	-.02 (.12)	.25* (.12)
<i>Andean</i> _{<i>I</i>}	.31 (.44)	1.56* (.39)	1.33* (.35)	1.38* (.34)
<i>ASEAN</i> _{<i>N</i>}	.64* (.15)	.77* (.13)	1.02* (.11)	.82* (.11)
<i>ASEAN</i> _{<i>I</i>}	2.21* (.43)	2.85* (.38)	1.76* (.33)	1.80* (.33)
Observations	2,699	2,699	2,699	2,699
Adjusted R ²	0.61	0.68	0.72	0.75

Notes: Standard errors are in parentheses. Intercept estimates are not reported. All variables except the dummies are in logarithmic form.

*Significant at the 5% level.

**Significant at the 10% level.

percent. Another way of stating this result is to break down the coefficient on bilateral distance (0.9), into an effect of bilateral distance *relative* to the average distance of the exporter (0.3 to 0.6) plus an effect an *absolute* distance effect (0.6 to 0.3).

The coefficient on the importer's remoteness is consistently negative, surprisingly, and statistically significant at the 5 percent level. Apparently, if Z's average distance from the world is greater than S by 1 percent, then Z's imports from M, other things equal, is less than S by 0.4–0.8 percent. We have not yet figured out why this might be.

Our central focus is estimates of intrabloc bias and extrabloc openness. We discuss them bloc by bloc. Notice that for a regional bloc with a small number of members, intrabloc bias is estimated imprecisely (i.e., with a large standard error), while extrabloc openness can be estimated more accurately. For example, the Mercosur group has four members. The dummy for intrabloc bias, *MERCOSUR_I*, takes the value of one only for 6 exporter-importer pairs and zero for the remaining 3,900 pairs. On the other hand, the dummy describing the bloc's openness with respect to imports from nonmember countries, *MERCOSUR_N*, assumes the value of one 236 times. We have to bear in mind the relative preciseness of the estimates in the subsequent discussions.

The coefficients on *EC_N* are positive in every single year, suggesting that EC countries on average have low trade barriers so that their imports from the rest of the world are higher than the prediction of the modified gravity model. In terms of time trend, however, EC's extrabloc openness appears to have declined over the sample. The EC's imports from the rest of the world used to be higher than the gravity-model prediction by 40 percent. But that shrank to 26 percent in 1980 and eventually to zero by the early 1990s.

Similarly, the year-by-year point estimates of the EC bloc effect and their dynamics tell an interesting story. In terms of levels, within-EC trade has always been below the prediction of the gravity model. In terms of trend, however, the degree of within-EC bias has clearly risen. This suggests that while the European countries were more open to trade than many countries, for historical or other reasons, their trade pattern exhibits evidence of increasing bias among members and increasing trade diversion away from member countries.

EFTA countries, in contrast to the members of the EC, appear to import less from the rest of the world than the gravity-model prediction in every single year. Trade among these countries seems below what one would have expected based on their economic, geographic, and linguistic linkages, although the difference is not statistically significant. EFTA's extrabloc openness appears to diminish over time (from –18 percent in 1970, to –44 percent in 1980, and to –75 percent in 1992).

The United States and Canada imported less from the rest of the world in 1970 than the model's prediction. However, there has been a general trend increase in the degree of openness of these two economies to imports from other countries, as the extrabloc openness parameter changes from a statistically sig-

nificant -46 percent in 1970, to a statistically insignificant -17 percent in 1992. Judging from the point estimates, there was a slight reduction in openness from 1990 to 1992, possibly reflecting the effect of the U.S.-Canada free trade agreement implemented in 1989, although both estimates are not different from zero at the 10 percent level.

The four South American countries that constitute Mercosur traded more intensely among themselves than the gravity-model prediction, as judged from the estimates for the *MERCOSUR_I* variable. There appears to have been an increase in the intragroup trade intensity in the 1970s and 1980s. On the other hand, during the same two-decade period, there also seems to have been an increase in the group's general openness to other countries' products. Hence, at least some modest across-the-board liberalization may have been undertaken at the same time as these countries expanded their trade to each other.

The Andean Group, the other major set of South American countries, also appears to show a certain degree of intragroup trade bias. On the other hand, their imports from the rest of the world were roughly in accordance with the gravity-model prediction. It is worth noting the jump in the extrabloc openness coefficient from essentially zero in 1990 to 25 percent in 1992. This suggests that these countries had an effective trade liberalization program during the period when they started to revive the slumbering regional association.

As a check for robustness, we have computed overall distance for exporters and importers as equally weighted distance from their trade partners. Gravity estimations with these measures are reported in table 7.2. As far as extrabloc openness and intrabloc bias are concerned, the qualitative features of the new estimates are similar to those in table 7.1. Thus, we omit detailed discussion.

Finally, we come to ASEAN, the only explicit regional trading arrangement among Asian countries in the sample. We note first that the intra-ASEAN trade bias is positive and significant in every year. However, the bias appears to be diminishing in the last decade, from 2.85 in 1980 to 1.80 in 1992. Second, ASEAN countries are far more open to the world than an average country, based on their economic, geographic, and cultural linkages. For example, in 1980, the imports by the ASEAN countries from the rest of the world were 116 percent ($= \exp(.77) - 1$) higher than the prediction of the gravity model. The 1991 decision to form an ASEAN FTA could conceivably be related to a slight (insignificant) drop in openness from 1990 to 1992. But ASEAN countries were still more open in 1992 than they were in 1980.

To summarize this section, a large number of regional blocs in the sample show positive openness to trade with outsiders. When countries choose to liberalize their trade with their neighbors, it may also facilitate multilateral liberalization. This is particularly possible for regional blocs in Asia and South America. But the results are mixed. For example, there are significant trade-diversion effects for EFTA. Thus regionalism may in some cases not lead to more general liberalization. We will examine the arguments in more detail in a later section.

Table 7.2 Trade Blocs and Openness: Gravity Estimation with Equally Weighted Relative Distance Measures

	1970	1980	1990	1992
Dependent variable: log (Exports from <i>i</i> to <i>j</i>)				
GNP _{<i>i</i>}	.87* (.03)	.90* (.02)	.83* (.02)	.96* (.02)
GNP _{<i>j</i>}	.86* (.03)	.91* (.03)	.88* (.02)	.90* (.02)
Per capita GNP _{<i>i</i>}	.41* (.04)	.40* (.03)	.16* (.02)	.20* (.02)
Per capita GNP _{<i>j</i>}	.28* (.04)	.28* (.03)	.06* (.03)	.07* (.03)
Bilateral distance _{<i>ij</i>}	-.89* (.07)	-.79* (.06)	-.87* (.05)	-.89* (.05)
Remoteness of <i>i</i>	.01 (.16)	.17 (.12)	.75* (.11)	.26* (.10)
Remoteness of <i>j</i>	.30 (.22)	-.82* (.14)	-.77* (.12)	-.62* (.12)
Adjacency	.17 (.21)	.08 (.19)	.54* (.16)	.46* (.16)
Language linkage	.32* (.10)	.54* (.09)	.34* (.08)	.61* (.08)
<i>EC_N</i>	.67* (.13)	.33* (.11)	-.43 (.10)	.08 (.10)
<i>EC_I</i>	-.19 (.21)	-.27 (.19)	-.25 (.17)	-.28** (.16)
<i>EFTA_N</i>	.08 (.16)	-.33* (.14)	-.84* (.12)	-.74* (.12)
<i>EFTA_I</i>	.47 (.42)	-.11 (.37)	-.37 (.33)	-.36 (.32)
<i>US-Canada_N</i>	-.33 (.21)	.02 (.19)	.04 (.16)	-.10 (.15)
<i>US-Canada_I</i>	-.70 (1.27)	-.22 (1.14)	-.51 (.99)	-.71 (.98)
<i>MERCOSUR_N</i>	-.31** (.16)	-.61 (.14)	.19 (.13)	-.21** (.12)
<i>MERCOSUR_I</i>	.67 (.55)	1.75* (.49)	2.11* (.43)	.86* (.42)
<i>Andean_N</i>	.04 (.16)	.30* (.14)	.08 (.13)	.34* (.12)
<i>Andean_I</i>	.19 (.45)	1.63* (.40)	1.34* (.35)	1.45* (.34)
<i>ASEAN_N</i>	.42* (.15)	.75* (.13)	1.07* (.11)	.84* (.11)
<i>ASEAN_I</i>	2.00* (.44)	2.91* (.38)	1.77* (.33)	1.89* (.33)
Observations	2,699	2,699	2,699	2,699
Adjusted R ²	.62	.68	.73	.75

Notes: Standard errors are in parentheses. Intercept estimates are not reported. All variables except the dummies are in logarithmic form.

*Significant at the 5% level.

**Significant at the 10% level.

7.3 The Regionalization of Currencies and Its Effect on Trade

In this section, we consider the possibility that currency links contribute to bilateral trade patterns. We show that bilateral exchange rates have been partially stabilized within the two major blocs, but that the effects on trade have been fairly small. Thus little of the intrabloc trade links estimated in the preceding section can be attributed to the intrabloc currency links.

7.3.1 Stabilization of Exchange Rates within the Blocs

It is instructive to look at statistics on the variability of exchange rates among various groupings of countries. Worldwide, monthly real exchange rate variability rose in the 1980s, from a standard deviation of 3.22 percent in 1980 to 6.98 percent in 1990. The latter figure suggests that, for a typical pair of countries, approximately 95 percent of monthly exchange rate changes are smaller than 14 percent (under the simplifying assumption of a log-normal distribution).

There is a tendency for nominal exchange rate variability to be lower within most of the groups than across groups, supporting the idea of currency blocs. These statistics are reported in table 7.3. The lowest variability occurs within Europe. The 1980 statistic is a monthly standard deviation of 2 percent, and it falls by half during the course of the decade. Even though the members of the EC correspond roughly to the members of the European Monetary System (EMS),¹ non-EC members in Europe show as much stability in exchange rates (both vis-à-vis themselves and vis-à-vis other European countries) as EC members. These results no doubt in part reflect that the United Kingdom and the Mediterranean countries have not been consistent members of the Exchange Rate Mechanism, especially not within the narrow margins that the others observed until 1993. But it also reflects that such countries as Austria are loyal members of the currency club de facto, even though they are not yet in that club de jure.

One way that countries in a given area could achieve the observed lower levels of intraregional bilateral exchange rate variability is to link their currencies to the single most important currency in the region. In a simple version of the currency-bloc hypothesis, one would expect that the dollar has dominant influence in the Western Hemisphere, the yen in East Asia, and the mark in Europe. In Frankel and Wei (1994b), we examine the influences that the most important international currencies have on the determination of the values of currencies of smaller countries, by estimating implicit weights in a currency basket benchmark. Unsurprisingly, the mark has the overwhelmingly dominant weight in determining the value of most European currencies. In the Western Hemisphere, most of the countries tested give dominant weight to the dollar.

1. Of the EC members, only Greece had not joined the Exchange Rate Mechanism by early 1992 (though Italy and England dropped out soon thereafter).

Table 7.3 Mean Volatility of Monthly Real and Nominal Exchange Rates

Entire World (63 countries)				
	Real Rate	Nominal Rate		
Observations	1,081	1,770		
1965	0.042075	0.028132		
1970	0.029120	0.019186		
1975	0.044608	0.036175		
1980	0.032227	0.031364		
1985	0.080961	0.072245		
1990	0.069847	0.077298		
Western Hemisphere				
	Among Members		With the Rest of the World	
	Real Rate	Nominal Rate	Real Rate	Nominal Rate
Observations	78	78	442	611
1965	0.087273	0.079522	0.056805	0.047818
1970	0.056393	0.048040	0.037712	0.029744
1975	0.064088	0.056925	0.053026	0.046059
1980	0.030026	0.021343	0.033670	0.030500
1985	0.16410	0.17915	0.11148	0.11540
1990	0.13824	0.19515	0.094498	0.12487
European Economic Community (predecessor of the European Union)				
	Among Members		With the Rest of the World	
	Real Rate	Nominal Rate	Real Rate	Nominal Rate
Observations	45	55	370	539
1965	0.017975	0.0013808	0.033617	0.018203
1970	0.013521	0.0077273	0.023547	0.014857
1975	0.023947	0.018182	0.039339	0.032903
1980	0.020350	0.017834	0.032199	0.031967
1985	0.019171	0.016586	0.064494	0.058641
1990	0.012036	0.0097418	0.055230	0.059050
East Asia (EAEC)				
	Among Members		With the Rest of the World	
	Real Rate	Nominal Rate	Real Rate	Nominal Rate
Observations	3	21	172	416
1965	0.016960	0.041700	0.029392	0.031197
1970	0.058080	0.026516	0.035399	0.020715
1975	0.025727	0.026994	0.035500	0.032326
1980	0.030570	0.026914	0.029284	0.028659
1985	0.047970	0.034891	0.064616	0.057851
1990	0.033250	0.019260	0.060240	0.058726

(continued)

Table 7.3 (continued)

Asia Pacific Economic Cooperation Forum (APEC)				
	Among Members		With the Rest of the World	
	Real Rate	Nominal Rate	Real Rate	Nominal Rate
Observations	28	66	312	576
1965	0.008594	0.024897	0.029889	0.026718
1970	0.025547	0.017227	0.027609	0.018375
1975	0.029604	0.028851	0.038648	0.033309
1980	0.019988	0.021441	0.028438	0.027949
1985	0.045946	0.038942	0.067632	0.060800
1990	0.035360	0.026978	0.058762	0.060894

Notes: Volatility is defined as the standard deviation of the first difference of the logs of the monthly exchange rate over the current and preceding years (24 months). To ensure comparability over time, all computations are performed over country pairs that have nonmissing values throughout 1965–90.

The pattern of linking to the major currency of the region is broken in East Asia, however. The weight on the dollar is very high in most East Asian countries, with no special role for the yen. The Japanese currency is statistically significant in Singapore, and occasionally in some of the other countries in the region, but the coefficient is low. Each of the Asian countries is more properly classed in a dollar bloc than in a yen bloc. It thus appears that there are not three currency blocs in the world, but two: a mark bloc in Europe and a dollar bloc in the Pacific.

7.3.2 An Attempt to Estimate the Effect of Exchange Rate Variability on Trade

One rationale for a country to assign weight to a particular currency in determining its exchange rate is the assumption that a more stable bilateral exchange rate will help promote bilateral trade with the partner in question. This is a major motivation for exchange rate stabilization in Europe. There have been quite a few time-series studies of the effect of exchange rate uncertainty on trade overall,² but fewer cross-section studies of bilateral trade.

Three exceptions are Thursby and Thursby (1988) and De Grauwe (1988), which look only at a group of industrialized countries, and Brada and Mendez (1988). We will reexamine the question here using a data set that is broader, covering sixty-three countries. We return to a version of the gravity model of bilateral trade as in Frankel, Stein, and Wei (chap. 4 in this volume), but add an additional variable to capture the effect of exchange rate variability alongside the other variables. A problem of simultaneous causality should be noted at the outset: if exchange rate variability shows up with an apparent negative effect on the volume of bilateral trade, the correlation could be due to the gov-

2. The literature is reviewed in Edison and Melvin (1990).

Table 7.4 Effect of Exchange Rate Volatility: Nominal Rates
(total trade, 1965–90)

	1965	1970	1975	1980	1985	1990
GNP	0.63* (0.02)	0.64* (0.02)	0.72* (0.02)	0.76* (0.02)	0.76* (0.02)	0.76* (0.02)
GNP per capita	0.27* (0.02)	0.36* (0.02)	0.27* (0.02)	0.27* (0.02)	0.25* (0.02)	0.12* (0.02)
Bilateral distance	-0.40* (0.04)	-0.51* (0.04)	-0.68* (0.05)	-0.62* (0.04)	-0.71* (0.04)	-0.60* (0.04)
Adjacency	0.78* (0.17)	0.69* (0.17)	0.53* (0.18)	0.64* (0.18)	0.73* (0.18)	0.68* (0.16)
WH2	0.05 (0.16)	0.01 (0.14)	0.26*** (0.15)	0.44* (0.15)	0.34** (0.16)	0.71* (0.14)
EAEC2	1.59* (0.31)	1.60* (0.29)	0.87* (0.33)	0.81* (0.26)	0.60** (0.28)	0.67* (0.25)
APEC2	0.60* (0.22)	0.70* (0.17)	0.87* (0.23)	1.35* (0.18)	1.21* (0.19)	1.39* (0.17)
EE2	0.20 (0.16)	0.08 (0.21)	-0.10 (0.18)	0.01 (0.18)	0.45** (0.18)	0.51* (0.16)
Nominal exchange rate variability	-3.81* (0.60)	-2.47* (0.09)	-1.49** (0.74)	-7.65* (0.08)	0.13 (0.34)	2.24* (0.27)
Observations	1,115	1,231	1,401	1,653	1,589	1,519
Adjusted R ²	0.70	0.72	0.72	0.72	0.74	0.78
Standard error of estimation	1.04	1.06	1.18	1.18	1.17	1.05

Notes: Standard errors are in parentheses. All variables except the dummies are in logarithms. WH2, EAEC2, APEC2, and EE2 are dummy variables for both countries belonging to the same bloc. For example, WH2 = 1 if both countries are in the Western Hemisphere, and 0 otherwise.

*Significant at the 1% level ($t \geq 2.576$).

**Significant at the 5% level ($t \geq 1.96$).

***Significant at the 10% level ($t \geq 1.645$).

ernment's deliberate efforts to stabilize the currency vis-à-vis a valued trading partner, as easily as to the effects of stabilization on trade.

Volatility is defined to be the standard deviation of the first difference of the logarithmic exchange rate. We start with the volatility of nominal exchange rates and embed this term in our gravity equation. The results are reported in table 7.4. Table 7.5 does the same for the volatility of real exchange rates. Most coefficients are similar to those reported in the earlier paper (chap. 4 in this volume) without exchange rate variability: the Western Hemisphere, East Asia, Asia-Pacific Economic Cooperation (APEC), and the EC all show statistically significant bloc effects.

The ordinary least squares (OLS) show a negative effect of exchange rate volatility (whether nominal or real) on bilateral trade that is highly significant in 1965, 1970, 1975, and 1980. Only in 1985 and 1990 does the negative effect disappear (indeed, turn positive). Henceforth we concentrate our discussions on the regressions involving real exchange rate variability.

Table 7.5 Effect of Exchange Rate Volatility: Real Rates (total trade, 1965–90)

	1965	1970	1975	1980	1985	1990
GNP	0.72* (0.02)	0.65* (0.02)	0.72* (0.02)	0.74* (0.02)	0.76* (0.02)	0.76* (0.02)
GNP per capita	0.24* (0.03)	0.36* (0.02)	0.27* (0.02)	0.26* (0.02)	0.25* (0.02)	0.12* (0.02)
Bilateral distance	-0.53* (0.05)	-0.50* (0.04)	-0.67* (0.05)	-0.62* (0.04)	-0.71* (0.04)	-0.57* (0.04)
Adjacency	0.59* (0.18)	0.77* (0.16)	0.58* (0.18)	0.73* (0.18)	0.73* (0.18)	0.80* (0.16)
<i>WH2</i>	0.02 (0.15)	0.02 (0.13)	0.27*** (0.15)	0.42* (0.15)	0.30*** (0.15)	0.74* (0.14)
<i>EAEC2</i>	0.99** (0.50)	1.80* (0.32)	0.85* (0.32)	0.76* (0.26)	0.60** (0.27)	0.71* (0.25)
<i>APEC2</i>	0.44*** (0.26)	0.67* (0.21)	0.90* (0.22)	1.35* (0.18)	1.16* (0.18)	1.38* (0.17)
<i>EE2</i>	0.04 (0.17)	0.08 (0.16)	-0.06 (0.18)	0.02 (0.18)	0.40** (0.17)	0.57* (0.16)
Real exchange rate variability	-3.02* (0.67)	-2.72* (0.83)	-1.57** (0.82)	-6.97* (0.08)	0.12 (0.37)	3.19* (0.27)
Observations	773	1,053	1,316	1,503	1,500	1,494
Adjusted R^2	0.76	0.76	0.74	0.75	0.75	0.78
Standard error of estimation	0.94	0.99	2.21	1.13	1.14	1.04

Notes: Standard errors are in parentheses. All variables except the dummies are in logarithms. *WH2*, *EAEC2*, *APEC2*, and *EE2* are dummy variables for both countries belonging to the same bloc. For example, *WH2* = 1 if both countries are in the Western Hemisphere, and 0 otherwise.

*Significant at the 1% level ($t \geq 2.576$).

**Significant at the 5% level ($t \geq 1.96$).

***Significant at the 10% level ($t \geq 1.645$).

By way of illustration, these point estimates can be used for some sample calculations. They suggest that if the level of EC real exchange rate variability that prevailed in 1980, a standard deviation of 2 percent, had been eliminated altogether, the volume of intra-EC trade would have increased by 14.18 percent ($= 6.97 \times 2.04$). This OLS estimate should be regarded very much as an upper bound. For one thing, the 1980 point estimate of the effect of exchange rate volatility is the largest of all the years. In the earlier observations, the magnitude of the estimated effect is one-fifth to one-half the size.

Worldwide, the average level of exchange rate variability in 1980 was 3.22 percent. The OLS-estimated effect on trade of adopting fixed exchange rates worldwide was thus 22.44 percent ($= 6.97 \times 3.22$).

The exchange rate disruptions of September 1992 and August 1993 may herald a return to the level of variability among the EMS countries that prevailed in 1980. Table 7.3 shows that this would represent an approximate doubling of the standard deviation of exchange rates, relative to the stability that had been achieved by 1990. What would be the predicted effects on trade? The

Table 7.6 **Sample Calculation of the Effects of Exchange Rate Stabilization by the European Union on Trade during 1980–90 (upper-bound estimate)**

Changes in Volatility from 1980 to 1990	Elasticity of Trade with Respect to Volatility (1980 estimate)	Estimated Change in Trade due to Bilateral Currency Stabilization (%)
Nominal exchange rate volatility (OLS) $0.0097 - 0.0178 = -0.0081$	-7.65	+6.2
Real exchange rate volatility (OLS) $0.0120 - 0.0204 = -0.0084$	-6.97	+5.9
Real exchange rate volatility (instrumental-variables method) $0.0120 - 0.0204 = -0.0084$	-0.28	+2.4

OLS estimate in table 7.5 suggests that trade would fall by 5.85 percent ($= 6.97 \times (2.04 - 1.20)$). Table 7.6 reports this calculation, and the corresponding calculations for some other possible estimates.

Interpretations of the estimates in tables 7.4 and 7.5 are complicated by the likelihood of simultaneity bias in the above regressions. Governments may choose deliberately to stabilize bilateral exchange rates with their major trading partners. This has certainly been the case in Europe. Hence, there could be a strong observed correlation between trade patterns and currency linkages even if exchange rate volatility does not depress trade.

To address this problem, we use the method of instrumental variable estimation, with the standard deviation of relative money supply as our instrument for the volatility of exchange rates. The argument in favor of this choice of instrument is that relative money supplies and bilateral exchange rates are highly correlated in theory (they are directly linked under the monetary theory of exchange rate determination), and in our data as well, but monetary policies are less likely than exchange rate policies to be set in response to bilateral trade patterns. The instrumental variables results, reported in table 7.7, show the same sign pattern across the years as the OLS estimates, but the negative effect is statistically significant only in 1965. The coefficient for 1980 is (a completely insignificant) 0.28; even if the point estimate is taken at face value, it would imply that the elimination of exchange rate variability worldwide would increase trade by only 0.9 percent ($= 0.28 \times 3.22$).

These results, while less robust than most of the other gravity equation findings, are generally consistent with the hypothesis that real exchange rate volatility has depressed bilateral trade a bit in the 1960s and 1970s. But the evidence for a negative trade effect, which starts out relatively strong in 1965, diminishes steadily in the 1970s and 1980s, especially if one takes due account of the simultaneity. The proliferation of currency options, forward contracts, and other hedging instruments over this period may explain why the effect that appears once to have been there, has more recently disappeared.

Table 7.7 Effect of Real Exchange Rate Volatility: Using Volatility of Relative Money Supply as Instrument (total trade, 1965–90)

	1965	1970	1975	1980	1985	1990
GNP	0.82* (0.05)	0.66* (0.02)	0.72* (0.02)	0.74* (0.02)	0.78* (0.02)	0.77* (0.02)
GNP per capita	-0.07 (0.12)	0.33* (0.04)	0.25* (0.02)	0.26* (0.03)	0.21* (0.02)	0.11* (0.02)
Bilateral distance	-0.50* (0.12)	-0.51* (0.08)	-0.69* (0.05)	-0.67* (0.05)	-0.74* (0.05)	-0.61* (0.04)
Adjacency	1.09* (0.47)	0.69* (0.18)	0.51* (0.20)	0.62* (0.19)	0.66* (0.20)	0.70* (0.17)
WH2	1.10*** (0.60)	0.16 (0.43)	0.42** (0.17)	0.49* (0.15)	0.33*** (0.17)	0.55* (0.17)
EAEC2	1.28 (0.92)	1.71* (0.43)	0.90** (0.35)	0.79** (0.32)	0.70*** (0.36)	0.52*** (0.27)
APEC2	0.26 (0.46)	0.74* (0.23)	1.09* (0.24)	1.49* (0.20)	1.22* (0.21)	1.39* (0.17)
EE2	-0.17 (0.35)	0.00 (0.18)	-0.12 (0.24)	0.00 (0.22)	0.39*** (0.20)	0.59* (0.16)
Real exchange rate variability	-38.03** (0.28)	-4.54 (11.73)	-2.05 (1.54)	-0.28 (3.22)	0.18 (0.46)	3.89* (0.59)
Observations	393	921	1,076	1,187	1,163	1,319
Adjusted R^2	0.51	0.76	0.73	0.74	0.76	0.79
Standard error of estimation	1.40	0.97	1.14	1.13	1.12	1.03

Notes: Standard errors are in parentheses. All variables except the dummies are in logarithms. WH2, EAEC2, APEC2, and EE2 are dummy variables for both countries belonging to the same bloc. For example, WH2 = 1 if both countries are in the Western Hemisphere, and 0 otherwise.

*Significant at the 1% level ($t \geq 2.576$).

**Significant at the 5% level ($t \geq 1.96$).

***Significant at the 10% level ($t \geq 1.645$).

7.4 Stumbling Blocks or Building Blocks? The Political Economy of Regional Blocs

Although the multilateral system has made large strides toward freer trade, most recently in the form of the successful conclusion of the Uruguay Round negotiations in December 1993, political constraints inevitably prevent the immediate attainment of the economist's nirvana. Since some influential producer interest groups in each country typically stand to lose from free trade, full unilateral liberalization rarely occurs, and the world must instead await the outcome of step-by-step multilateral negotiations. In these negotiations, countries trade concessions with each other in such a way that at each step the percentage of the population that stands to gain is sufficiently high to overcome the political opposition.

In this light, the case in favor of regional trading arrangements is a second-best argument that takes as given the impossibility of further most-favored-

nation (MFN) liberalization. The uninitiated might assume that free trade economists would under these circumstances necessarily support FTAs. But from the standpoint of static economic welfare, trade economists are ambivalent about the desirability of FTAs. So long as tariffs and other barriers against third countries remain in place, the elimination of barriers between two FTA members can as easily intensify distortions as eliminate them.³

The classical distinction is between the harmful trade-diverting effects of FTAs and their beneficial trade-creating effects. Although modern theories of trade have gone beyond the diversion/creation distinction, it is still a useful intuitive guide to likely welfare effects.⁴ Grossman and Helpman (1995), for example, find in a lobbying model that an FTA is most likely to be adopted when trade diversion outweighs trade creation, which unfortunately is also when it is most likely to reduce aggregate welfare.

7.4.1 Negative Political Implications for Multilateral Trade Liberalization

There are a variety of arguments as to how the adoption of a regional trading area might undermine movement toward unilateral or multilateral liberalization for political reasons: these fall under the headings “incentive to protect” or market power, scarce negotiator resources, political deadend, and manipulation of the process by special interests. We consider these antiregionalization arguments first, before considering some arguments that go the other way.

Blocs’ Market Power and Incentive to Protect

The standard experiment presumes that the level of trade barriers against outsiders remains unchanged when a customs union is established. However, Krugman (1991a) shows that, in a world consisting of a few large blocs, each unit will have more monopoly power and thus will be more tempted to seek to shift the terms of trade in its favor by raising tariffs against the other blocs. This is the “incentive to protect.” This temptation will be minimized in a world of many small trading blocs (or in a world of MFN, i.e., each country its own bloc). A world of a few large blocs is thus one in which the noncooperative equilibrium features a higher level of interbloc tariffs and a lower level of economic welfare. In Krugman’s simulation, three turns out to be the worst number of blocs to have. Haveman (1992) gets essentially the same result, with expected world welfare minimized in a world of only two customs unions, using a model where trade arises from comparative advantage rather than from product differentiation (following the Deardorff-Stern critique of Krugman).

3. On the grounds of such trade-diversion effects, and other considerations discussed below, Bhagwati, Krueger, and Panagariya generally oppose regional trading arrangements. Bhagwati (1995, 11) and Panagariya (1995, 20, n. 8) have confessed that they were prepared to oppose the NAFTA publicly, if asked. They are now skeptical of other ongoing initiatives, including APEC.

4. Stein and Frankel (1994) show in a model of imperfect competition that a simulation comparison of the magnitudes of trade creation and trade diversion provides the right answer to the question whether FTAs raise the welfare of the representative consumer, under many plausible parameter values, though not all.

The Krugman model assumes that members of a trade bloc set their external tariffs together, that is, that the arrangement is a customs union. The “incentive to protect” story would be different for a standard FTA, in which each country is able to set its tariffs independently with respect to nonmembers. Sinclair and Vines (1994) argue that in the FTA case there is actually an incentive for each country to *reduce* its external tariffs, just the opposite of the customs union case. Richardson (1993a) derives the result, that is, the superiority of an FTA to a customs union, in a model where tariffs are set endogenously, by a government that seeks to maximize a function of the profits of protected industries, in addition to consumer welfare. The FTA member with a comparative disadvantage in a particular good will experience a decline in the political influence of that industry as competition within the FTA diminishes the industry’s economic size. Thus the country will tend to reduce protection for that industry, in a way that would not be possible if bound by the common external tariff of a customs union. Panagariya and Findlay (1994) assume that protection is the endogenous outcome of lobbying, and derive the opposite results regarding the FTA/customs union comparison from Richardson and Sinclair and Vines: the lobby chooses a lower external tariff under a customs union than under an FTA. The customs union is more effective at diluting the power of interest groups.

In reality, governments in one sense are less capable of national economic optimization than the Krugman model presupposes, and in another sense they are more capable. In both respects, large trading blocs are less vulnerable to the incentive to raise tariffs against each other than under Krugman’s assumptions. Governments are less capable of optimization, in that maximum exploitation of the terms of trade (through imposition of the “optimum tariff”) is in practice one of the *less* prevalent determinants of trade policy. More commonly seen are arguments regarding infant industries, protecting the scarce factor of production, increasing employment, and adjustment costs. Governments are *more* capable of optimization in that they have already instituted the cooperative international regime of GATT, as Bergsten (1991) pointed out in his comment on Krugman (1991b). Article XXIV of GATT explicitly rules out Krugman’s concern. This provision allows deviations from the MFN principle only for FTAs or customs unions that do not raise the average level of their tariffs against nonmembers.

There are several reasons to worry that blocs’ “incentive to protect” survives despite the existence of article XXIV. First, and most obviously, article XXIV is often disregarded, as Bhagwati (1992) reminds us. Second, as Bagwell and Staiger (1993, n. 25) point out, exacerbation of the incentive to protect in customs unions can take the form of “gray-area” measures when explicit tariff increases are ruled out. Third, one hopes that the multilateral process is on a path whereby worldwide tariff rates are gradually reduced through negotiation, and that this path is the relevant benchmark, not unchanging tariffs. Bond and Syropoulos (1996) show that arriving at the cooperative equilibrium of an

agreement for interbloc liberalization in a repeated game, which is seen as GATT's role to facilitate, becomes more difficult as the size of the blocs, and therefore their monopoly power, rises.

Scarce Negotiator Resources

The scarce-negotiator-resources argument points out that negotiations are not costless. If they were, then the world would have achieved free trade by now. If the U.S. special trade representative is spending all his or her time—and spending all the White House's political capital with Congress—on a regional agreement (e.g., NAFTA), there is presumably less time or capital left over to spend on multilateral negotiations (e.g., the Uruguay Round). As with the incentive-to-protect argument, regional trading arrangements may set back the process of negotiating worldwide trade liberalization under GATT.

Some authors—for example, Summers (1991) and Krugman (1993)—have argued that the costs of negotiation go up with the number of countries involved, so that it is easier to negotiate customs unions first, and then proceed to multilateral liberalization among the smaller number of larger units. Others question the practicality of the small numbers claim—Bhagwati (1993b), Winters (1996), and Panagariya (1994, 830–31).

Political Deadend

Some have suggested political models in which regional initiatives can prevent multilateral initiatives because the sequence of decisions matters. The forces in favor of liberalization might win out over protectionists if the only choice is between the status quo and multilateral liberalization; but when offered the option of a regional FTA, the political process might then take the regional route to the exclusion of the multilateral route. Bhagwati (1993b, 28–29) worries that businessmen and bureaucrats, after having achieved regional integration, might then find the effort involved in multilateral negotiation too difficult. “Lobbying support and political energies can readily be diverted to preferential trading arrangements such as FTAs. . . . That deprives the multilateral system of the support it needs to survive, let alone be conducive to further trade liberalization” (Bhagwati 1993a, 162).

Levy (1993) offers what might be called a median-voter deadend model, in which a bilateral free trade agreement can undermine support for multilateral liberalization because it is a deadend in the political process. It is assumed that trade policy is determined by the median voter. Trade itself is determined in some sectors by differences in factor endowments, and in others by considerations of imperfect substitutes. As others have argued, the intraindustry sort of trade that is generated in imperfect substitutes is easier to accept politically than the factor-endowment kind of trade. The reason is that adjustment to import competition requires workers only to move from the assembly line for one product variety to the assembly line for another variety of the same product. Trade based on differences in factor endowments is much more difficult to

accept politically, because it requires workers in previously protected industries to move to different industries (and at lower wages, in the case of capital-intensive industrialized countries).

Levy argues that policy toward trade is thus always a trade-off between the gains afforded by increased varieties and the losses inflicted by a fall in the relative price of the product that is intensive in the scarce factor (labor, in the case of industrialized countries). If liberalization is not attainable, it is because the losses from factor-endowment trade dominate. If a vote is held first on whether to join a bilateral FTA, the proposition is more likely to pass when the potential partner has similar factor endowments. (It is easier politically to achieve an EU than a NAFTA or APEC.) The reason is that the gains from increased trade in imperfect substitutes will be large, while the losses from a fall in the relative price of labor-intensive products will be small. But if a vote is then held on multilateral liberalization, it will fail: those key sectors that stand to profit from trade in imperfect substitutes will already have reaped those gains, and there will be fewer political forces to countervail the sectors that lose from the additional factor-endowment trade. In this way regional free trade agreements undermine political support for multilateral liberalization in this model.

Manipulation by Special Interests

The special-interests argument points out that the process of instituting a regional trading arrangement features abundant opportunities for trade-sensitive industries to manipulate the process, particularly those sectors that might be adversely affected. Examples abound. First, Wonnacott and Lutz (1989, 65–66) emphasize that negotiators frequently seek to exclude from regional FTAs precisely those of their sectors that would be most threatened by welfare-enhancing trade creation. The members of ASEAN, for example, have until now exempted almost all the important sectors from the system of preferences that they are supposed to grant each other (Panagariya 1994, 828–29). Grossman and Helpman (1995, 680–87) have used their lobbying model to understand how the possibility of such industry exclusions increases the chances of FTAs being adopted. This was the primary reason for another restriction that GATT article XXIV places on FTAs, that “substantially all” barriers within the region be removed. In practice, FTAs have tended to comply less than completely with this provision. Examples include the European Economic Community’s exclusion of agriculture and, in practice, steel and many other goods.

Second, Anne Krueger (in press, 1995) emphasizes the exploitation of rules of origin. An FTA, unlike a customs union, does not involve the setting of common external tariffs. Rules of origin are a mechanism by which a country can prevent imports from nonmembers, transshipped via the FTA partner, in those sectors where the partner has lower tariffs. Richardson (1993b), Krueger (in press), and Krishna and Krueger (1995) show how individual industries in

the FTA negotiation can enhance the extent of protection they receive when their governments use rules of origin to enable them to capture their FTA partner's market in addition to their own, thus diverting trade from foreign suppliers. Richardson (1993b) emphasizes that prices at which producers can sell are equalized within an FTA, even when rules of origin are successful in keeping the consumer price higher in the higher-tariff country.⁵ Krueger (1995), on the other hand, argues that customs unions are always Pareto superior to FTAs, because they have no rules of origin that can be exploited in this way.

Bhagwati (1993b, 30–31; 1995, 22) and Panagariya (1995, 16–21) point out that large countries like the United States may use their overwhelming bargaining power within regional groupings to obtain from small countries distorting concessions that they might not obtain in more balanced multilateral negotiations. Perroni and Whalley (1994) and Whalley (chap. 3 in this volume) point out that small countries have been the supplicants in recent regional agreements, and show how large countries have all the bargaining power on their side.

7.4.2 Positive Political Implications for Multilateral Trade Liberalization

Other arguments go the other way. They offer the hope that the adoption of a regional trading area might undermine protectionism and reinforce movement toward liberalization more generally. The arguments concern locking in unilateral liberalization, the efficiency of negotiating with larger units, mobilization of regional solidarity, building export constituencies to create domestic political momentum, and competitive liberalization.

Lock-in and Mobilizing Regional Solidarity

In the late 1980s, Mexican president Salinas reversed a half century of Mexican protectionism and imposed sweeping unilateral liberalization measures. Future presidents of Mexico might seek to reverse this liberalization. Thus, a good argument for NAFTA was that it locked in the Salinas reforms in a manner that would be difficult to reverse in the future (e.g., Lawrence 1991).

Elsewhere, such as in Andean Pact countries, leaders have used popular support for regional solidarity to achieve liberalization that would be politically impossible if pursued unilaterally. De Melo, Panagariya, and Rodrik (1993, section 3) model the process whereby governments can adopt rules or institutions in a regional grouping to insulate themselves from pressure by private-sector lobbies for intervention on their behalf.

Efficiency of Negotiating with Larger Units

Within the context of multilateral negotiations, it is awkward to negotiate separately with over a hundred small countries. It has been argued that if small

5. Competition for tariff revenue among the FTA members may then result in an equilibrium where external tariffs are reduced to zero.

countries form themselves into larger groupings, which presumably have to be customs unions with common external trade policies, then they can negotiate as a group.⁶ This is thought to increase the efficiency of the negotiations, and to make a satisfactory worldwide agreement more likely. The EU is certainly the most important example of this. Other groupings, such as ASEAN and South Asian Association for Regional Cooperation (SAARC), have also been urged to integrate regionally, so as to be able to talk with the larger powers.

Competitive Liberalization

In an important analysis of the political economy of regional blocs, Oye (1992) argues that the expected costs of exclusion from groupings change the political dynamics, by strengthening the antiprotectionist constituencies domestically, so as to draw countries into multilateral negotiations. Whereas many authors might read the recent experience as regionalism helping build support for multilateral liberalization, Oye finds that this was also true of the 1930s experience.

“Competitive liberalization” refers to building political momentum for liberalization among countries, rather than domestically (Bergsten 1995). An illustration is President Clinton’s “triple play” of late 1993 (Bergsten 1994, 18–20; Kahler 1994, 19, 25). By upgrading the Seattle meeting of APEC ministers that had been scheduled for November 1993 into a high-profile leaders’ meeting, he signaled to the Europeans that if they continued to allow French farmers to hold up the Uruguay Round, other countries might proceed without them. This message carried credibility because of its fortunate timing, coming as it did on the heels of the hard-fought approval of NAFTA in the U.S. Congress. Thus, the NAFTA outcome demonstrated the political will necessary for meaningful agreements, while the APEC meeting demonstrated the possibility that agreements would cover a fraction of the world economy that was sufficiently large and dynamic to give the Europeans cause for worry at the prospect of being left out. German policymakers have reportedly confirmed that this was part of their motive for concluding the Uruguay Round in December. In this episode at least, it appears that regional initiatives helped bring about multilateral agreement.

Of course, the game need not always come out so well. The trouble with making credible threats is that sometimes they must be carried out. The process that is traditionally feared is *competitive regionalization*, where the formation of one regional grouping puts pressure on other countries to form a bloc of their own, rather than to liberalize unilaterally or multilaterally. The worst situation for a country is to be one of the few that do not belong to any bloc, because the terms of trade then turn against it. For this reason, there is a danger

6. E.g., Deardorff and Stern (1994), Krugman (1993), and Summers (1991). Kahler (1994) suggests that plurilateral negotiations among a small number of regional neighbors may allow more efficient treatment of new individual issue areas than do global negotiations.

that the world will become stuck in a Nash noncooperative equilibrium of several continental FTAs: each continent forms an FTA because, given that the next continent is doing so, it will be hurt if it does not respond in kind. In the resulting equilibrium, all are worse off than they were under the status quo of MFN. (Hence the argument for discouraging FTAs in GATT in the first place, as under article XXIV.) Furthermore, even if continents are allowed to choose the level of intrabloc preference to maximize their individual welfares, rather than being constrained to go all the way to FTAs, in equilibrium they will still choose a level of preference that is so high as to leave everyone worse off. This is the “incentive to protect” argument we have already seen. These points are shown in a model with intercontinental transport costs by Stein (1994, 83–93).⁷

On the other hand, since the ultimate goal is worldwide free trade, it is not clear that the ultimate political-economy dynamic is bad. Worldwide economic welfare is so reduced by a noncooperative equilibrium of four continental FTAs that it may then become politically possible for them to agree multilaterally to remove the barriers that remain between them and go to worldwide free trade. This would seem to follow if the obstacle to a move from MFN to worldwide free trade is a moderate fixed resource cost to negotiations (say 1 percent of GDP, to buy off producers that stand to lose). The leap to free trade would be all the more likely to follow if the resource cost to negotiation increases with the number of distinct entities involved.

What happens if the first bloc allows other countries to join? (This is one possible interpretation of the phrase “open regionalism.”) A number of authors have shown that nonmember countries will, one by one, find it in their interest to join a given FTA.⁸ While the bloc expands, its members gain progressively, as the terms of trade are shifted further and further in their favor. Those that continue to be left out lose progressively. In the model of Deardorff and Stern (1994), the bloc continues to grow until it encompasses the whole world, the happy outcome of global free trade. Their model, however, assumes that the bloc at each stage places prohibitive tariffs on outsiders, a rather extreme assumption.

Saxonhouse (1993) and Stein (1994) consider the same problem, while allowing trade with nonmembers. They find that when the bloc reaches a certain size (20 out of 30 members in Saxonhouse, and 16 out of 30 in Stein), it will choose not to accept any new members, because its own welfare starts to decline after that. What makes this story especially alarming from the viewpoint of ultimate multilateral liberalization is that the single bloc is truly a

7. In a simulation, the status quo of MFN features worldwide welfare that falls short of free trade by only about 0.5 percent of GNP (which may not be enough to overcome negotiating costs). Each continent in sequence has an incentive to form an FTA, raising its welfare but lowering that of all the other continents, until all four have done so. In that noncooperative equilibrium, the loss relative to global free trade is about 2.5 percent.

8. Bond and Syropoulos (1996), Deardorff and Stern (1994), Saxonhouse (1993), and Stein (1994), each with somewhat different specifications of the model.

deadend: welfare of the bloc members is higher than it would be under worldwide free trade, so that they have an incentive to reject multilateral liberalization that they did not have when the alternative was MFN. At this unhappy deadend point, worldwide welfare is close to its minimum, the very low welfare of the nonmembers outweighing the high welfare of the members.

At some point, the nonmembers will presumably wise up and form a bloc of their own. But given two competing blocs, the incentive for individual countries will be to join the larger of the two to share in its monopoly power. A world of two equal-sized blocs is unstable (Bond and Syropoulos 1996). A simulation in Stein (1994, 99–102) shows that the stable equilibrium has twenty-six out of thirty countries in one large bloc, and four in the other. Again, the large bloc has no incentive to take mercy on those excluded.

Stein (1994, 103–5) has a proposed solution to this difficulty: that article XXIV be amended to state that preferences within a bloc cannot go beyond a specified low level (22 percent is the magic limit, in his simulation). We have already seen (in the Frankel-Stein-Wei model) that such a restriction—the opposite of the current article XXIV requirement for 100 percent preferences—would be welfare-improving in a world of equal-sized continental blocs. The same is true when there are no intercontinental transport costs and there is a temptation for countries to join the larger of two blocs. The equilibrium still features one large bloc (twenty-four countries) and one small (six countries). But with the limit on the margin of preferences in place, the large bloc has nothing to lose by moving to worldwide free trade, so that the happy outcome is still ultimately attainable. Of course the members of the large bloc would vote against such a rule in GATT. However, if the issue is decided before any single incipient grouping is large enough to know that it will be the dominant bloc, then everything will work out for free trade.

7.5 A Simple Political-Economy Model

In this section, we sketch a simple political-economy model of our own that illustrates another potentially beneficial role that regional blocs can play to promote further trade liberalization. A fuller version can be found in Wei and Frankel (1996). We set up the model using the structure in Fernandez and Rodrik (1991). By construction, global free trade is not obtainable directly in a political process. We then show how a regional initiative may break this impasse. The essential argument is isomorphic to that of Wei (forthcoming), which illustrates some political-economy benefits of gradualist reforms over big bang in transition economies.

Consider a two-period world. Countries A and B are two small open economies. The rest of the world is labeled country C. There are three goods, x , y , and z . All can be produced by a constant-returns-to-scale (CRTS) technology with labor being the only input. Specifically, for country k , the technology to produce good j is

$$j^k = \frac{L_j^k}{\theta_j^k},$$

where $k = A, B,$ and $C,$ and $j = x, y,$ and $z.$

To minimize notational complication while still preserving enough richness for our discussion, we will assume that the technology parameter Θ takes one of two values.

$$\begin{aligned} \tau_j^k &= \alpha, & \text{if } (k, j) &= (A, x), (B, y), \text{ or } (C, z); \\ &= \beta & \text{otherwise,} \end{aligned}$$

where $\alpha < \beta$ and the index (k, j) represents the value of unit labor requirement for good k in country $j.$

Trade policy decisions are made by majority vote. The labor distribution in countries A and B has the feature that no single sector has a majority, and the sum of any two sectors constitutes a majority. For example, the labor force can be evenly divided among the three sectors. On the other hand, in country C (i.e., the aggregation of all the other countries in the world), workers in sector z constitute a majority. Hence, country C always wants global free trade if it can get it. This assumption on country C allows us to focus our discussion on countries A and B.

7.5.1 Global Free Trade Is Infeasible

With this configuration, each country has an unambiguous winner (e.g., sector x for A). Suppose that in countries A and B the two less efficient sectors receive tariff protection at the ad valorem rate $r.$ Because of the symmetry between the two countries, we restrict our attention to one, say A. Trusting it will not lead to confusion, we omit the country superscript for all variables.

Assume perfect competition in each sector. The constant returns to scale technology ties down the wage rates to the cum-tariff goods prices. That is,

$$w_j = p_j / \Theta_j.$$

By appropriately choosing the values of $\Theta,$ we can let the wages be the same in the three sectors in the absence of any change in the status quo. From the viewpoint of country A, global free trade means removal of tariffs on goods y and $z.$ With the removal of the two tariffs, w_y and w_z fall.

The crucial assumption of the model is that job relocation is costly. The cost is individual-specific. But individuals do not know their own switching costs before the trade liberalization takes place. All they know is the probability distribution of the costs. We use c_i to denote the cost for individual i of switching from one sector to another.

With this setup, it is easy to demonstrate the following possibility using the Fernandez-Rodrik (1991) argument. On the one hand, global free trade will benefit a majority in countries A and B if it has a chance to be implemented.

On the other hand, a (different) majority will oppose it *ex ante*. Those who oppose it do it rationally, as the expected loss from free trade may outweigh the expected gain. (See Wei and Frankel 1996 for a more detailed exposition.)

7.5.2 Regional Bloc Is Feasible

Consider a proposal to form an FTA between A and B. *Ex post*, as a result of tariff removal, the price of good *y* in country A (and that of good *x* in country B) will decline. Not surprisingly, people in sector *x* in country A unambiguously benefit from this and will support the regional bloc. Interestingly, people in sector *z* also benefit from a lower price on good *y*. Hence, if they base their action on this period's utility, they will also support the move, which makes the number of supporters in country A a majority.

7.5.3 Global Free Trade Reconsidered

Once a free trade bloc with country B is in place, we can reconsider the political feasibility of a proposal for global free trade. Those people who remain in sector *y*, although suffering a real income loss from the regional bloc, realize that further liberalization, as under a global free trade agreement, will not cause another drop in their wage; rather it will lead to a drop in the price of good *z*. Therefore, people in sector *y* together with those in sector *x* will now collectively support a move to global free trade.

Note, to be completely correct, that this analysis assumes voters are myopic in the sense that, when voting on the regional bloc, they ignore the prospect of a future vote on global free trade. However, the behavior can be rational, if the voters have a high discount rate or there is uncertainty about the future (for example, about whether there is going to be a second vote at all), so that the expected future loss would be sufficiently small relative to the current gain from the regional deal.

The behavior can also be rational in an alternative setting. Assume, instead of having a forever-young population, we have successive generations in each country. Assume further that each period (appropriately defined) is dominated by a different generation, and there is little intergenerational altruism. Then, the referenda on the regional bloc and global free trade take place in different generations. Each will succeed politically exactly in the way as delineated above.

7.5.4 Regional Blocs as a Divide-and-Conquer Device

In our above story, a regional bloc works as a stepping stone toward global free trade under several scenarios, including a high discount rate and independent generations. Does the result hold without these assumptions? In particular, if people in sector *z* realize that free trade with B will lead to free trade with C, or the tariff on *z* will eventually be removed, would they still support the regional trade arrangement?

We would like to argue that the result still holds in a two-period model. To do this, we need to assume that the government is able to set an agenda and

commit to it. The agenda is simply a two-stage plan: in period 1, the government will hold a referendum on forming a free trade bloc with country B; and in period 2, regardless of the outcome of the first referendum, the government will hold another referendum on forming a free trade bloc with country C (the rest of the world).

Notice that when $t = 2$, it is the people in sector y together with those in x that push the country toward further trade liberalization. Therefore, in order to block the regional trade arrangement, which by itself is in the interest of people in sector z , people in sector y have to promise and convince people in sector z that they will not agree to free trade with country C at $t = 2$. But such a promise is not time-consistent. That is, when $t = 2$, it is in the interest of people in sector y to vote for free trade with C. Given that free trade with C will likely be the outcome at $t = 2$, the best strategy for people in sector z at $t = 1$ is to vote for free trade with country B. In this way, they at least get the benefit of a lower price on good y . Hence, by using a regional bloc as an intermediate step, the government can pursue global free trade as an end result of a two-step process.

The logic of the above argument derives from the inability of one group of people to precommit their future actions to another group. Hence, using backward induction, we can show that the same argument holds in a multiple but finite-period world. The prospect of collusion cannot be ruled out *ex ante* in an infinite-period model. However, the large number of people in each sector in the real world and the uncertainty about the future make collusion difficult.

7.5.5 Regionalism as a Possible Deadend

The discussion so far has centered on how regional trade blocs may change the dynamics of domestic political forces so as eventually to render global free trade feasible. It is important to make clear that regionalism is not a panacea for political opposition to multilateral free trade. Indeed, it is just as easy to construct models such that regional trade blocs may develop into a deadend, so that the countries involved may never be able to move toward global free trade.

7.6 Concluding Discussion

Using a modified gravity model that incorporates relative remoteness of exporters and importers from the world and an updated data set covering 1970–92, we have mapped out the current pattern of regionalization in trade. Bloc effects are apparent in many parts of the world. We also presented some estimates of the role that currency links within some major groupings might have played in promoting intragroup trade. We find that the world is better described as falling into two currency blocs, rather than three: a dollar bloc in the Pacific and a mark bloc in Europe. The tendency to stabilize bilateral exchange rates within these blocs apparently gave a statistically significant boost to bilateral trade in the 1970s, but this effect vanished in the 1980s.

Next, we reviewed various political economy arguments that others have

made regarding regionalism, either to the effect that it can help build political momentum for multilateral liberalization (building blocs) or to the effect that it can undermine more general liberalization (stumbling blocs). We review a simple model of our own that is in the first category: it illustrates one possible beneficial effect of trade blocs as a political building block to further trade liberalization.

Are regional blocs building blocks or stumbling blocks to multilateral liberalization? Given that political-economy forces could go either direction, it would be useful to know which effect dominates in practice. The gravity-model estimates offer us a tentative assessment on this question. A majority of FTAs, such as ASEAN and the Andean Pact, have increased trade with non-members, even as the members may have increased trade to an even greater extent with each other. In these cases, regionalism has apparently been consistent with more general liberalization. The pattern is mixed, however. Other FTAs, such as EFTA, show evidence of trade diversion. Apparently regionalism can, depending on the circumstances, be associated with either more or less general liberalization.

References

- Anderson, Kym. 1993. European Integration in the 1990s: Implications for World Trade and for Australia. In D. G. Mayes, ed., *External Implications of European Integration*. London: Harvester Wheatsheaf.
- Arase, David. 1991. U.S. and ASEAN Perceptions of Japan's Role in the Asian-Pacific Region. In Harry Kendall and Clara Joewono, eds., *Japan, ASEAN, and the United States*. Berkeley: University of California, Institute for East Asian Studies.
- Bagwell, Kyle, and Robert Staiger. 1993. Multilateral Tariff Cooperation during the Formation of Customs Unions. NBER Working Paper no. 4543. Cambridge, MA: National Bureau of Economic Research, November.
- Bergsten, C. Fred. 1991. Commentary: The Move toward Free Trade Zones. In Federal Reserve Bank of Kansas City, *Policy Implications of Trade and Currency Zones*, 43–57. Kansas City: Federal Reserve Bank.
- . 1994. Sunrise in Seattle. *International Economic Insights* 5 (January/February).
- . 1995. *Competitive Liberalization*. Washington, DC: Institute for International Economics.
- Bhagwati, Jagdish. 1992. Regionalism vs. Multilateralism. *World Economy* 15 (September): 535–56.
- . 1993a. Beyond NAFTA: Clinton's Trading Choices. *Foreign Policy* 15 (summer): 155–62.
- . 1993b. Regionalism and Multilateralism: An Overview. In Jaime de Melo and Arvind Panagariya, eds., *New Dimensions in Regional Integration*. New York: Cambridge University Press.
- . 1995. President Clinton's Trade Policy: Is It Really a Triumph? Presented at American Economics Association meetings, Washington, DC, January.
- Bond, Eric, and Costas Syropoulos. 1996. Trading Blocs and the Sustainability of Inter-

- Regional Cooperation. In M. Canzoneri, W. J. Ethier, and V. Grilli, eds., *The New Transatlantic Economy*. London: Cambridge University Press.
- Brada, Josef, and Jose Mendez. 1988. Exchange Rate Risk, Exchange Rate Regimes, and the Level of International Trade. *Kyklos* 41, no. 2:198.
- Deardorff, Alan, and Robert Stern. 1994. Multilateral Trade Negotiations and Preferential Trading Arrangements. In Alan Deardorff and Robert Stern, eds., *Analytical and Negotiating Issues in the Global Trading System*. Ann Arbor: University of Michigan Press.
- De Grauwe, Paul. 1988. Exchange Rate Variability and the Slowdown in Growth of International Trade. *IMF Staff Papers* 35:63–84.
- de Melo, Jaime, Arvind Panagariya, and Dani Rodrik. 1993. Regional Integration: An Analytical and Empirical Overview. In Jaime de Melo and Arvind Panagariya, eds., *New Dimensions in Regional Integration*. New York: Cambridge University Press.
- Dhar, Sumana, and Arvind Panagariya. 1995. *Is East Asia Less Open Than North America and the EEC? No*. Policy Research Working Paper Series No. 1370. Washington, DC: World Bank, January.
- Dornbusch, Rudiger. 1989. The Dollar in the 1990s: Competitiveness and the Challenges of New Economic Blocs. In *Monetary Policy Issues in the 1990s*. Kansas City: Federal Reserve Bank of Kansas City.
- Edison, Hali, and Michael Melvin. 1990. The Determinants and Implications of the Choice of an Exchange Rate System. In William Haraf and Thomas Willett, eds., *Monetary Policy for a Volatile Global Economy*. Washington, D.C.: AEI Press.
- Encarnation, Dennis. 1992. *Rivals beyond Trade: America versus Japan in Global Competition*. Ithaca: Cornell University Press.
- Fernandez, Raquel, and Dani Rodrik. 1991. Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty. *American Economic Review* 81 (December): 1146–55.
- Frankel, Jeffrey. 1991. Is a Yen Bloc Forming in Pacific Asia? In Richard O'Brien, ed., *Finance and the International Economy*, AMEX Bank Review Prize Essays. Oxford: Oxford University Press.
- . 1993. Is Japan Creating a Yen Bloc in East Asia and the Pacific? In Jeffrey Frankel and Miles Kahler, eds., *Regionalism and Rivalry: Japan and the U.S. in Pacific Asia*, 53–85.
- Frankel, Jeffrey, and Shang-Jin Wei, 1994a. A “Greater China” Trade Bloc? *China Economic Review* 5 (fall): 179–90.
- . 1994b. Yen Bloc or Dollar Bloc? Exchange Rate Policies of the East Asian Economies. In Takatoshi Ito and Anne Krueger, eds., *Macroeconomic Linkage: Savings, Exchange Rates, and Capital Flows*, 295–329. Chicago: University of Chicago Press.
- . 1995. Is a Yen Bloc Emerging? In Robert Rich, ed., *Economic Cooperation and Challenges in the Pacific*, vol. 5. Washington, DC: Korea Economic Institute of America.
- Frankel, Jeffrey, Shang-Jin Wei, and Ernesto Stein. 1995. APEC and Regional Trading Arrangements in the Pacific. In Wendy Dobson and Frank Flatters, eds., *Pacific Trade and Investment: Options for the 90s*, 289–312. John Deutsch Institute, Queen's University.
- Grossman, Gene, and Elhanan Helpman. 1995. The Politics of Free Trade Agreements. *American Economic Review* 85 (September): 667–90.
- Hamilton, Carl, and L. Alan Winters. 1992. Opening Up International Trade in Eastern Europe. *Economic Policy* 14 (April): 77–117.
- Haveman, Jon. 1992. Some Welfare Effects of Dynamic Customs Union Formation. In *On the Consequences of Recent Changes in the Global Trading Environment*, Ph.D. diss., University of Michigan.

- Kahler, Miles. 1994. Regional Futures and Transatlantic Economic Relations. Council on Foreign Relations, New York, December. Manuscript.
- Krishna, Kala, and Anne Krueger. 1995. Implementing Free Trade Areas: Rules of Origin and Hidden Protection. In Jim Levinsohn, Alan Deardorff, and Robert Stern, eds., *New Directions in Trade Theory*. Ann Arbor: University of Michigan Press.
- Krueger, Anne. In press. Rules of Origin as Protectionist Devices. In James Melvin, James Moore, and Ray Reisman, eds., *International Trade and Trade Policy*. Cambridge: MIT Press.
- . 1995. Free Trade Agreements versus Customs Unions. NBER Working Paper no. 5084. Cambridge, MA: National Bureau of Economic Research, April.
- Krugman, Paul. 1991a. Is Bilateralism Bad? In Elhanan Helpman and Assaf Razin, eds., *International Trade and Trade Policy*. Cambridge: MIT Press.
- . 1991b. The Move toward Free Trade Zones. In Federal Reserve Bank of Kansas City, *Policy Implications of Trade and Currency Zones*, 7–42. Kansas City: Federal Reserve Bank.
- . 1993. Regionalism versus Multilateralism: Analytical Notes. In Jaime de Melo and Arvind Panagariya, eds., *New Dimensions in Regional Integration*, 58–79. New York: Cambridge University Press.
- Kwan, C. H. 1994. *Economic Interdependence in the Asia-Pacific Region: Towards a Yen Bloc*. London: Routledge.
- Lawrence, Robert. 1991. Emerging Regional Arrangements: Building Blocks or Stumbling Blocks? In R. O'Brien, ed., *Finance and the International Economy*, AMEX Bank Review Prize Essays, 24–36. Oxford: Oxford University Press.
- Levy, Philip. 1993. A Political-Economic Analysis of Free Trade Agreements. Center for Economic Policy Research Publication no. 347. Stanford University, January.
- Linneman, Hans. 1966. *An Econometric Study of International Trade Flows*. Amsterdam: North-Holland.
- Oye, Kenneth. 1992. *Economic Discrimination and Political Exchange: World Political Economy in the 1930s and 1980s*. Princeton: Princeton University Press.
- Panagariya, Arvind. 1994. East Asia and the New Regionalism. *World Economy* 17 (November): 817–39.
- . 1995. The Free Trade Area of the Americas: Good for Latin America? Center for International Economics Working Paper. College Park: University of Maryland.
- Panagariya, Arvind, and Ronald Findlay. 1994. A Political-Economy Analysis of Free Trade Areas and Customs Unions. Working Papers in International Economics no. 2. University of Maryland.
- Perroni, Carlo, and John Whalley. 1994. The New Regionalism: Trade Liberalization or Insurance? NBER Working Paper no. 4626. Cambridge, MA: National Bureau of Economic Research, January.
- Petri, Peter. 1992. One Bloc, Two Blocs, or None? Political-Economic Factors in Pacific Trade Policy. In Kaoru Okuzumi, Kent Calder, and Gerrit Gong, eds., *The U.S.-Japan Economic Relationship in East and Southeast Asia: A Policy Framework for Asia-Pacific Economic Cooperation*, 39–70. Significant Issues Series, vol. 14, no. 1. Washington, DC: Center for Strategic and International Studies.
- Richardson, Martin. 1993a. Endogenous Protection and Trade Diversion. *Journal of International Economics* 34 (May): 309–24.
- . 1993b. On Equilibrium in a Free Trade Area with Internal Trade. Georgetown University, May.
- Saxonhouse, Gary. 1993. Pricing Strategies and Trading Blocks in East Asia. In Jeffrey Frankel and Miles Kahler, eds., *Regionalism and Rivalry: Japan and the U.S. in Pacific Asia*, 89–119. Chicago: University of Chicago Press.
- Schott, Jeffrey. 1989. *Free Trade Areas and U.S. Trade Policy*. Washington, DC: Institute for International Economics.

- . 1991. Regional Trading Blocs. *World Economy*.
- Sinclair, Peter, and David Vines. 1994. Do Fewer, Larger Trade Blocs Imply Greater Protection? The Good News and the Bad News about Regional Trading Blocs. University of Birmingham and Oxford University, June. Manuscript.
- Stein, Ernesto. 1994. The Welfare Implications of Asymmetric Trading Blocs. In *Essays on the Welfare Implications of Trading Blocs with Transportation Costs and Political Cycles of Inflation*. Ph.D. diss., University of California, Berkeley.
- Stein, Ernesto, and Jeffrey Frankel. 1994. The Welfare Implications of Continental Trading Blocs in a Model with Transport Costs. Pacific Basin Working Paper Series no. PB94-03. San Francisco: Federal Reserve Bank, May.
- Summers, Lawrence. 1991. Regionalism and the World Trading System. In *Federal Reserve Bank of Kansas City, Policy Implications of Trade and Currency Zones*, 295–302. Kansas City: Federal Reserve Bank.
- Thurow, Lester. 1992. *The Coming Economic Battle among Japan, Europe, and America*. New York: William Morrow.
- Thursby, Jerry, and Marie Thursby. 1988. Bilateral Trade Flows, the Linder Hypothesis, and Exchange Risk. *Review of Economics and Statistics*, 488–95.
- Viner, Jacob. 1950. *The Customs Union Issue*. New York: Carnegie Endowment for International Peace.
- Wang, Zhen Kun, and L. Alan Winters. 1991. The Trading Potential of Eastern Europe. CEPR Discussion Paper no. 610. London: Centre for Economic Policy Research, November.
- Wei, Shang-Jin. Forthcoming. Gradualism versus Big Bang: Speed and Sustainability of Reforms. *Canadian Journal of Economics*.
- Wei, Shang-Jin, and Jeffrey Frankel. 1996. Can Regional Blocs Be Stepping Stones to Global Free Trade? *International Review of Economics and Finance* 5:339–47.
- Winters, Alan. 1996. *Regionalism and Multilateralism*. Washington, DC: The World Bank. Manuscript.
- Wonnacott, Paul, and Mark Lutz. 1989. Is There a Case for Free Trade Areas? In Jeffrey Schott, ed., *Free Trade Areas and U.S. Trade Policy*, 59–84. Washington, DC: Institute for International Economics.
- World Trade Organization Secretariat. 1995. *Regionalism and the World Trading System*. Geneva: World Trade Organization.

Comment David Hummels

In this paper the authors provide some empirical evidence on the nature of regional trading patterns, then develop a political-economy model of regionalization and trade liberalization. I will focus my comments entirely on the empirical sections of their paper.

The authors argue that the best way to understand the nature of regional blocs is to examine trade patterns directly, rather than to focus on legal arrangements that bring them into force. Accordingly, they present evidence of these patterns in the form of a bilateral gravity model of trade. The idea is that in the context of a complete specialization model of trade it is possible to provide a

“norm” of bilateral trade.¹ This norm is based on such variables as size, per capita incomes, and naturally occurring trade resistance factors like distance, adjacency, and language. Once established, the authors look for deviations from this “norm” that indicate intraregional biases. This is done by including intercepts for trading blocs, and by including measures of bilateral exchange rate variability.

In the context of a complete specialization model, empirical gravity estimates describe both how trade *is* and how trade *should be*. If one finds complete specialization to be a compelling description of international production and trade, the authors’ approach is legitimate and informative. In this vein, I have only a few quibbles that I will present here. Below, I will address the theoretical foundations of this enterprise, and whether these inferences are appropriate.

The authors report that size, incomes, and a variety of trade resistance factors such as distance, adjacency, and language are significantly correlated with bilateral trade. This result is standard in the literature, and unsurprising here. They find that intraregional trade biases are significant, and that bilateral exchange rate variability diminishes trade somewhat. However, this relationship breaks down in later years. Several problems are evident.

First, the authors’ pool data on trade from 1970 through 1992 in order to measure the effects of regionalism. The hypothesis implicit in the regional bloc intercepts is that regional trading arrangements cause deviations from the “norm” of bilateral trade. Of course, NAFTA did not exist until sometime after the sample period ends, so it is a bit mysterious how it could have caused these deviations. While one might argue that anticipation of the trading bloc might explain patterns in advance, inclusion of trade for 1970 stretches things a bit. The possibility this raises is simply that there is something unique about North American trade, or European or East Asian trade, that is not well captured in the included variables. Thus, omitted variables, and not the presence of regional trading arrangements, cause deviations from bilateral trade “norms.”

Second, the authors justify inclusion of bilateral exchange rate variability as an explanatory variable by describing it as a kind of trade resistance, possibly one that regional currency areas may mitigate. They report that it has some diminishing effect on trade, and in table 7.6 present some upper-bound estimates of the effect of exchange rate stabilization in the European Union between 1980 and 1990. This table is misleading, even as an upper-bound estimate. The elasticity of trade with respect to volatility comes from 1980, easily the largest estimate. Further, the relationship between trade and volatility actually becomes significantly *positive* by 1990, a year in which volatility increases dramatically worldwide.

1. Complete specialization may be due to product differentiation as in familiar monopolistic competition models, but can also be found in perfect competition models. See Deardorff, chapter 1 in this volume.

Third, bilateral exchange rate variability lacks strong theoretical foundations for inclusion here. It is not clear, for example, why *bilateral* variability matters and not *overall* variability. Further, the general equilibrium effects on trade are poorly understood. If the peso begins to fluctuate wildly against the dollar, does it also fluctuate against other currencies? If so, doesn't this increase costs for all trading partners, resulting in price changes that offset the effects of the fluctuation?

On a related matter, there are a great many empirical gravity estimates in this literature, each with a partial listing of favorite variables that plausibly correlate with trade. In this regard, empirical gravity estimates closely resemble the literature on cross-country growth regressions. Like that literature, gravity empirics would benefit greatly from robustness checking in the style of Levine and Renelt (1992).

Above I suggested that, if one finds complete specialization a compelling description of production and trade, the authors' approach is legitimate and informative. In what follows, I want to reopen the question of the gravity model's theoretical foundations and ask if the inferences regarding intraregional trade biases drawn here are appropriate.

Theoretical foundations for gravity empirics employ complete specialization and identical preferences to generate the simple gravity equation with trade proportional to the bilateral partners' sizes and the distance between them. This paper (and most other empirical gravity work) studies the volume of *all* trade, including primary, intermediate, capital, and consumption goods. However, the theory addresses only trade in consumption goods, which comprise something on the order of one-third of all trade. For simple gravity predictions to go through in a model including all trade, one needs complete specialization in all goods, *and* a production analog of identical preferences. Derived demands for nonconsumption goods come from production functions; thus, production functions must be identical across countries. Further, because goods are completely specialized, it must be that the same production function applies for all countries *and for all goods*. This strains plausibility.

Nevertheless, the gravity equation fits the data quite well, leading naturally to the question, why? I will offer at least a partial explanation here.² Theoretical gravity models are fundamentally about the positive proportionality between country size (measured by partners' GDPs) and bilateral trade. This relationship is also very strong empirically. Theoretical models generating the equation imply that this relationship should hold exactly for every country pair. However, the econometric exercise does not impose such strong conditions. It asks if, on average, large countries have large bilateral trade volumes. What must be true for this to hold?

Proposition 1: If a country trades a lot with the world as a whole, it must be that, on average, it trades a lot with its bilateral partners.

2. See Haveman and Hummels (1997) for a more detailed exposition of the points that follow.

Proposition 2: If large countries trade more with the world as a whole, then large countries must, on average, trade more with their bilateral partners.

These propositions may seem obvious, coming as they do from a simple adding-up constraint, but their logic is important. Neither proposition says anything about individual partners; the volume of trade with any one partner could be greater or smaller than the sample mean. On average, however, a country with more trade overall must have more bilateral trade. So, the only thing that is necessary for the gravity equation to hold econometrically is for large countries to have more trade with the world. Though one can imagine specific models where there is no correlation between size and overall trade, it can be shown that this relationship is robust to a very wide class of trade models. It will be true of models in which production is completely specialized and trade is therefore bilaterally determinate. It will also be true of a broad class of models in which production is incompletely specialized and trade is therefore bilaterally indeterminate.

In the paper at hand, the authors wish to provide a “norm” of bilateral trade against which to measure deviations associated with intraregional trade biases. This suggests two problems. First, even if there is an overall tendency to trade more intraregionally, it is difficult to make normative statements about the bias. Second, regional trading bloc dummies are not necessarily evidence of intraregional bias.

To see the first point, consider the problem of a small country choosing to import wheat from among ten equal-sized exporter countries, each of which charges the same c.i.f. price for its wheat. The gravity equation predicts that this country will import one-tenth of the total amount from each country. Suppose instead that it buys all of its wheat from one country. It is getting the same amount of wheat at the same price, and so cannot be worse off. Indeed, any arbitrary combination of bilateral import volumes that adds up to its total import demand will give the same welfare. And, if overall import demand increases with the size of the importer, any arbitrary combination will still “fit” the gravity model econometrically. This illustrates that, with incomplete specialization, bilateral trade volumes can depart from gravity predictions in arbitrary ways that have absolutely no normative content.

Regarding evidence of intraregional bias in trading patterns, consider a neoclassical model with many homogeneous goods, many countries, and no barriers to trade. Trade is determined vis-à-vis the world and distributed in some indeterminate way among its bilateral partners. A regression of trade volume on country size indicates an average relationship between these variables for the sample. If a country’s *total* trade is higher than its size predicts (it lies above the regression line), then the average trade of its bilateral pairs must also be higher than its size predicts. As a result, that country’s bilateral pairs will tend to have a positive intercept in a bilateral trade estimate. For a given bilateral pair, if both countries have an above average tendency to trade overall, this bias in the intercept is reinforced. This is not to say that every one of the bilateral pairs will be above average, merely that there will be a bias in this direction.

To control for this effect, can one simply compare the within-bloc intercepts to intercepts indicating one partner is in the bloc and one out? The authors argue that if within-bloc dummies are positive and extrabloc dummies are negative, this is evidence of trade diversion. Assume that bloc members have a higher than average tendency to trade overall, and nonbloc members have a lower than average tendency. Then, intrabloc dummies will tend to be positive, and extrabloc dummies will be smaller or negative. This indicates that these countries' trade volumes deviate from overall averages, but says nothing about their bilateral relationships. Why would a bloc have a systematically higher overall trade volume than its size predicts? Well, perhaps because these blocs are trade creating, not trade diverting!

References

- Haveman, Jon, and David Hummels. 1997. What Can We Learn from Bilateral Trade? Gravity and Beyond. Mimeo.
- Levine, Ross, and David Renelt. 1992. A Sensitivity Analysis of Cross-Country Growth Regressions. *American Economic Review* 82:942–63.

Comment Philip I. Levy

I very much enjoyed reading the Frankel and Wei paper. It deals with issues that are central to the normative discussion about regional trade liberalization and provides some provocative answers. I will confine my comments about the empirical section of the paper to a brief concluding thought. I would like to focus my discussion instead on the theoretical political-economy issues, since this is an area in which I have done some work. Frankel and Wei give a very useful summary of work on this front and extend it with a new model of their own.

Let me start by characterizing some of the challenges for anyone trying to make a theoretical argument in this area. The basic question is whether regional agreements are likely to lead toward or away from multilateral liberalization. Frankel and Wei take it as given that multilateral liberalization is the ultimate goal—the economist's nirvana, as they put it—an assertion with which I heartily concur.

For a regional agreement to *lead* anywhere, we must have in mind some idea of endogenous policy formation. Further, since regional agreements are “leading,” we wish to have such a model where we start with some sort of regional decision and end with some sort of multilateral decision.

It makes some difference whether one starts by assuming that—absent any regional agreement—a multilateral agreement is politically feasible or not. I

have done some work in which multilateral free trade is politically feasible initially and regional agreements may render it infeasible (Levy 1994). In this median voter setting I also show that the effect could not work in reverse. The idea is that the median voter—or whoever is controlling the policy decision—will only allow his or her welfare to ratchet upward. If multilateral liberalization is preferred to an initial state, this is because the deciding actors would be better off under multilateral free trade. If they would prefer the initial state to multilateral free trade, why would they accept an intermediate state that made them worse off, so that multilateral free trade might then look appealing?

This type of reasoning makes me pessimistic about the effects of regional agreements. Since much of the world seems to be pursuing strategies of regional liberalization, however, I would like to be persuaded this could be a positive force that expands possibilities for broader liberalization.

There are a number of works in the literature that make arguments along these lines, but I think the new model presented by Frankel and Wei is as convincing as any of them, so let me discuss it in detail.

The authors set up a model in which we have two countries, A and B, and a rest-of-world (country C). There are three sectors. Countries A and B each have a comparative advantage in an industry all their own, but produce and protect in the other two sectors. To enliven the discussion, let's assume that A is efficient in agriculture and inefficient in textiles and in "other manufactures." B is efficient in "other manufactures" and inefficient in agriculture and textiles.

The argument is that, without a regional agreement, one can allocate people and switching costs within a country in such a way that workers in two of three sectors would constitute a majority and successfully oppose global liberalization, so multilateral free trade is initially not feasible. Thus, in country A a coalition of textile and manufacturing workers opposes multilateral free trade, while in B a coalition of agricultural and textile workers opposes multilateral free trade. (The Fernandez and Rodrik [1991] structure that the authors adopt explains why a majority might approve of a change *ex post* but not *ex ante*. I will continue my summary without this complication, however, as the central points are unchanged.)

When these agents are presented with a bilateral free trade agreement between A and B, it is favored by two out of three sectors in each of the countries, and the "other manufactures" workers in A and the agricultural workers in B are forced to switch into their countries' efficient sectors. After the switch, they become supporters of multilateral free trade. Now there are majorities in favor of multilateral liberalization.

The tenor of this argument seems similar to one put forward by Rachel McCulloch and Peter Petri (1994), who argued that certain industry lobbies that opposed multilateral trade might get wiped out by regional liberalization.

Frankel and Wei present two versions of this argument. In the first version, the opponents of multilateral free trade do not anticipate the effects of their vote on the multilateral free trade decision (or the multilateral decision is so

far off in the future that the opponents of multilateral free trade don't care). I find this myopic case fairly unpersuasive as a predictor of world events. We see GATT liberalization and regional agreements proceeding concurrently and many of the opponents of multilateral liberalization—textiles workers and agricultural workers—are also opponents of the regional agreements. The unions in the United States that opposed NAFTA seemed to recognize the potential connection to multilateral free trade.

If the opponents of multilateral free trade are far-sighted, it seems that they should continue to be able to block multilateral free trade. Recognizing this, Frankel and Wei present a case in which myopia is not necessary. They show that, even though there was a majority opposed to multilateral free trade, through regional liberalization this coalition can be undone. This approach is referred to in the paper as the “divide and conquer” approach. The government—for reasons unspecified, but presumably because it agrees with us that multilateral free trade would be nirvana—sets up a very specific agenda in which there are two votes. The first vote is on a bilateral agreement between A and B. The second is on a bilateral agreement with C.

The effect of this structure is to divide the coalition opposing multilateral free trade. Frankel and Wei solve backward: whatever the outcome of the first vote, the “other manufactures” sector and the efficient agriculture sector in A will want to take advantage of the lower prices on textiles offered by free trade with C. Assuming the “other manufactures” sector is still intact at this stage (and not merged with agriculture), it would be unthreatened by the possibility of trade with B, since that will never be offered again (by assumption). Thus, agriculture and “other manufactures” in A would join together to approve a free trade agreement with C in the second stage.

The other inefficient sector in A, textiles, would anticipate this and favor the bilateral agreement with B in the first stage, since it offers cheaper “other manufactures” and since there seems to be no hope of maintaining a coalition against multilateral liberalization. Thus, in the end, the world is joined in multilateral free trade.

This strikes me as a very curious argument—the path to multilateral liberalization runs through renouncing multilateral liberalization! It is absolutely essential to the model that there *not* be a vote on multilateral free trade in the future. If there were, then it is straightforward to argue that the coalition opposed to multilateral free trade would not break apart. It is crucial that at the second-stage vote, *if* the first bilateral agreement were rejected, it would never be introduced again.

I find it somewhat hard to imagine that a government could credibly commit to such a strategy, particularly the kind of government that would set up such a special structure as a means to achieve multilateral free trade. It would be an especially impressive feat in a country in which two-thirds of the voters are opposed to multilateral free trade. Thus, I am not left feeling confident about the beneficial impact of regional liberalizations.

Frankel and Wei are thorough in their analysis and demonstrate the possibility of regional agreements not leading to multilateral free trade (which I find more plausible, for reasons given above). However, if one accepts their contention that the theoretical arguments could go either way, this suggests that empirical evidence should be all the more valuable.

Yet, it seems to me, the kind of empirical evidence we would like to see would be a demonstration that one of the political-economy effects predicted by myself, by Frankel and Wei, or by others is occurring—that regional liberalization has weakened or strengthened the power of an opponent of multilateral free trade (or, equally, that it has weakened or strengthened the power of a proponent of multilateral liberalization). Among regional agreements—real or imagined—it seems to me that only the European Union is sufficiently advanced as a region to have experienced such effects. By casual observation (I think of French agriculture or European auto manufacturing) it is not at all clear that regional liberalization has strengthened the prospects for multilateral liberalization.

References

- Fernandez, Raquel, and Dani Rodrik. 1991. Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty. *American Economic Review* 81 (December): 1146–55.
- Levy, Philip I. 1994. A Political-Economic Analysis of Free Trade Agreements. Economic Growth Center Discussion Paper no. 718. Yale University, June.
- McCulloch, Rachel, and Peter Petri. 1994. Alternative Paths toward Open Global Markets. Paper presented at the conference in honor of Robert M. Stern, University of Michigan, 18–20 November.