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ASEAN in a Regional Perspective

Jeffrey A. Frankel
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and
Shang-Jin Wei
Harvard University

November 1996

Department of Economics

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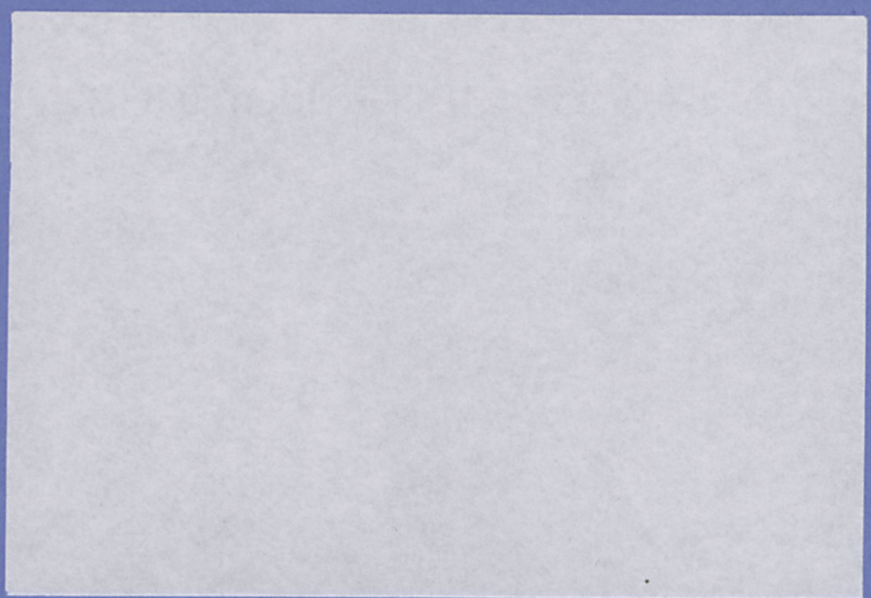

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ASEAN in a Regional Perspective

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ABSTRACT

Trade among the ASEAN economies is higher than one would expect, based on their income levels and other important determinants of bilateral trade. The same is true of trade within East Asia more broadly (or trade within an ASEAN-Australia-New Zealand grouping). To the extent that this regional concentration of trade is attributed to formal or informal regional trading arrangements, they appear to be trade-creating, not trade-diverting.

The rate of increase of trade within ASEAN or within East Asia, however, can be entirely explained by the rapid growth of the countries. There is nothing left over to attribute to an intensifying bloc. Perhaps the regional concentration, which shows up from the beginning of the sample period, is not due to formal measures, such as the decision to form an ASEAN FTA, but rather to a shared trading culture. (Trade among Southeast Asian countries will in the future naturally continue to grow more rapidly than incomes.)

The openness of the Indochinese countries, suitably adjusted, was very low in 1992, but had almost doubled by 1994. If these formerly autarkic countries restore normal trade relations with the rest of the world over the coming decade, the gravity model predicts that their trade will expand another seven-fold, in addition to the expansion attributable to growth.

The stock of Foreign Direct Investment (FDI) is a significant determinant of trade. We find that bilateral FDI can be modelled analogously to bilateral trade. In both cases, there is no evidence that Japan has accelerated its economic interactions with Southeast Asia, beyond what can be attributed to simple economic growth rates.

We accept others' arguments that the ASEAN countries' trade relations with the industrialized countries are more important than their relations with each other. But we do not accept the argument that the latter are unimportant. If the ASEAN countries make serious progress along the path that they have set for themselves under the AFTA, the gains from increased trade and investment in the area are potentially important. Furthermore, such progress would give them more of a voice at the global level.

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1. Introduction: ASEAN and Its Pattern of Trade

There are two striking conventional wisdoms about the status of regional trading blocs in East Asia. The first is that the only formal regional arrangement in the area, ASEAN (Association of SouthEast Asian Nations), does not in fact function as an economic bloc. Trade among the members is thought to be very low. The second is that East Asia taken as a whole *does* function as a trading and investment bloc, under Japanese direction, and increasingly so over time. This despite the absence of any formal preferential trading area among these countries. In other words, according to the conventional wisdom, the *de jure* regional trading arrangement is not a bloc *de facto*, and the *de facto* bloc is not one *de jure*. Like many conventional wisdoms, this characterization of East Asian trading patterns, although it has some truth in it, is not entirely correct. This paper investigates patterns of trade and direct investment in Southeast Asia, with an eye to these hypotheses regarding blocs.

1.1 A short history of ASEAN[1]

ASEAN was founded in 1967, for political purposes. It was declared a preferential trading arrangement (PTA) in 1977. The preferential trading agreement granted 10 to 15 percent margins of preference on 71 commodities and industrial projects in 1978. This amounted to little at the time, as the most important sectors were exempted from the system of preferences that

[1] References include DeRosa (1993a,b, 1995, 1996), Jackson (1991), Jaggi (1995), Panagariya (1994), and U.S. International Trade Commission (1993, p.53-54).

they were supposed to grant each other.[2] In one infamous example, Indonesia eliminated barriers to the import of snow-removal equipment. Between 1985 and 1987, the ASEAN leaders agreed to expand the list covered by the preferential trade agreement and to increase the margin of preferences. However, as recently as 1989, the fraction of goods eligible for regional preferences was still only on the order of 3 per cent.

Talks in January 1992 lead to the decision to create the ASEAN Free Trade Area. AFTA sounded more serious than the earlier attempts, calling for the reduction of tariffs and non-tariff barriers in phases from 1993 to 2008. At a meeting of Economic Ministers in 1994, the date for full implementation was moved forward to 2003. Unlike the earlier agreements, AFTA is to cover nearly all sectors of intra-ASEAN goods trade, including agriculture, although a number of exclusions for non-processed agriculture are still under negotiation and the treatment of NTBs is vague.[3] Even if fully implemented, the agreement will allow intra-bloc tariffs of up to 5% to continue. Thus the "FTA" is really a preferential trading arrangement. Some preliminary work has also been done on cooperation in services and intellectual property, but services are very far from liberalized.[4]

1.2 Conventional wisdom regarding intra-ASEAN trade

Conventional wisdom holds that trade within ASEAN is relatively low, despite the formal

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[2] Panagariya (1994, pp. 828-829).

[3] ITR 1/13/93, 5/3/95. After already having moved up the date for creation of the free trade area from 2008 to 2003, a plan to accelerate further -- specifically, to reduce 89 percent of the tariffs below the 5 percent level by the year 2000 -- was put forward at a December 1995 summit (*Asian WSJ*, July 31, 1995; *FT* July 22, 1996).

[4] ITR 5/3/95.

measures taken. But low compared to what? Trade within ASEAN is considered to be low compared to other regions of the world. In one variant of the conventional wisdom, the low share of intra-ASEAN trade is just what one would expect, given the similarity in the factor endowments of the ASEAN countries. DeRosa (1995, p.28) offers a typical statement of this view:[5]

> By comparison [with their trade with industrialized partners], intra-ASEAN trade accounted for only about 16 percent of ASEAN exports and imports combined. If intra-ASEAN trade involving Singapore is excluded, the extent of intra-ASEAN trade falls to a level lower than that for ASEAN trade with the East Asian NICs and the developing countries outside Asia...ASEAN economies are essentially competitive rather than complementary....[T]his means that ASEAN comparative advantage and greatest gains from trade lie mainly in trade with the major industrial countries...whose relative endowments of physical and human capital, basic labor, and natural resources are different from those of the ASEAN countries.

The assertion that intra-ASEAN trade is unusually low is not clearly right, depending on what metric is considered appropriate. Indeed, by some measures, trade among these countries is high, as we shall see. Two firms in Southeast Asian countries are far more likely to trade with each other than two firms at random locations around the globe. Much of this regional concentration can be explained by natural determinants such as geographic proximity, especially if one allows a special role for Singapore as an entrepot, and if one allows for the extra trade orientation of ASEAN countries and Asian countries in general. Nevertheless, the conclusion is that intra-ASEAN trade is not lower than would be expected.

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[5] Also Center for Research and Communications (1994, p.19-21), Cooke et al (1993), DeRosa (1993a), Institute of Southeast Asian Studies (1992, p.43), Lewis and Robinson (1995), Menon (1996), and others. Analogous conventional wisdoms apply to intra-Latin American trade and intra-African trade.

1.3 The problem with using intra-regional trade shares

The judgment that intra-ASEAN trade is low is largely based on simple trade share statistics. The denominator of the ratio is total trade undertaken by ASEAN countries, and the numerator is the trade that they undertake with each other. As Table 1 shows (Ratio 1), the regional trade share, though increasing gradually over time from 14 percent in 1980, was still only about 21 per cent in 1994. (Brunei is included. If Indochina is also included in the grouping, then the recent increase in trade within Southeast Asia is just slightly greater.) It is indeed true that most of ASEAN trade takes place with countries outside the group.[6]

By comparison, the European Union and NAFTA, have much higher intra-group shares (53 per cent and 33 per cent, respectively). However some FTAs, such as Mercosur and the Andean Pact, have even lower ratios than ASEAN (19 per cent and 10 per cent respectively). One might be tempted to infer from those statistics that FTAs are only likely to be successful among industrialized countries.

The conclusion that FTAs among developing countries do not fare well would be consistent with the experience of the 1960s, when many regional trading arrangements among poor countries were proclaimed with great fanfare, and then came to naught. The history is a

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[6] This statistic is computed by counting the trade between each pair of ASEAN countries twice. This is necessary if the intra-group trade share calculated for individual members is to be comparable with the intra-group share calculated for the group as a whole (e.g., Frankel, 1996). Another way of computing the statistic is to count trade between each pair of members only once (as in Frankel, 1993, p. 55, or Frankel and Wei, 1994a, p. 313). It makes little differences for cross-group comparisons. The latter measure shows an increase in intra-ASEAN trade (including Brunei) from 7.7 percent in 1980 to 9.7 percent in 1990 and 11.8 percent in 1994. If one includes Indochina in the grouping, the data (not available for the 1980s) show an increase from 10.2 percent in 1990 to 11.8 percent in 1994. [In both cases, the upward trend is wiped out if one normalizes for the weight of the region in world trade, as explained below.]

story of failure to translate visions into specific plans, of delays in implementation, of rampant sectoral exclusions or escape clauses, and of poor enforcement of nominal agreements.[7] But this judgment is not consistent with the experience of the 1990s, when such previously ineffective clubs such as the Andes Pact have become much more serious, and new FTAs such as Mercosur have been established.

A drawback to the trade share as a measure of intra-regional trade concentration can be seen in any table that compares different groupings. The larger the grouping, the higher the intra-regional trade ratio. The share is very high for large groupings like APEC or Western Europe. Is this because APEC has been very successful at promoting trade among its members and ASEAN has not? Not necessarily. Rather, it reflects primarily that APEC is a large group of countries, both in the sense of the number of members that belong and in the sense that many of them are quite large trading countries, while ASEAN represents a relatively small group of small countries. It is a necessary property of the intra-regional share measure that the bigger the set of countries around which one throws the lasso, the higher will be the apparent concentration of trade within. In the limit, if one throws the lasso around all countries of planet Earth, one would find a ratio of 100 percent. Only after one takes into account APEC's share of world trade (41 per cent) can one consider its intra-regional trade to be noteworthy.

The fallacy arises even more often in comparisons across time. The intra-regional share of East Asian trade has been rising steadily, for example from 36 per cent in 1980 to 49 percent

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[7] E.g., de la Torre and Kelly (1992, 26) and Balassa (1987). Hoekman and Leidy (1993) detail loopholes that typify this history. Plummer (1994) argues that ASEAN has eschewed timetables and commitments -- rather than making and breaking them, like other regional clubs -- which is a strength.

in 1994.[8] The increase in trade within East Asia has often been cited as evidence that Japan is building a trade bloc in East Asia, even without explicit policy steps toward a preferential trading area.[9] We shall see that these inferences regarding the speed with which trade is becoming intra-regionally concentrated are incorrect.

It is worth noting that levels or shares of intra-regional trade *are* indeed useful for *some* purposes. Let us say we are interested not in the effects of preferential tariffs and other policy determinants on bilateral trade patterns, but rather in the *effects of bilateral trade*. Such effects would be of interest, for example, to businesspeople, macroeconomists, and political scientists. Then it would be perfectly appropriate to look at the intra-regional trade shares.

A businessperson, particularly one in a trade-related industry like shipping, might want to know in what parts of the world is bilateral trade increasing the most rapidly, so that he or she can plan where to invest. A macroeconomist might want to know the sensitivity of a particular small Southeast Asian economy to sudden cyclical fluctuations emanating from the United States or Japan, which depends importantly on the magnitude of its trade links with these two countries. The old principle that East Asian economies are highly dependent on North

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[8] Frankel (1996).

[9] Despite widely-held fears of a new yen block in Asia (e.g., Arase, 1991), Japan is the only industrialized country that does *not* have reciprocal preferential trading arrangements with any neighbors. Proponents of the yen bloc hypothesis argue that Japan is forming an economic bloc in the same way that it runs its economy: by means of policies that are implicit, indirect, and invisible. This is a hypothesis to be tested with the gravity model, below. [An incomplete and imperfect list of other possible examples includes: Arase (1989), Dornbusch (1989; 1990, pp.126-127), Encarnation (1992), Kirkpatrick (1994), Kwan (1994), Thurow (1992, pp.16,65), and Young (1993). Press articles abound, such as "The Yen Block: A New Balance in Asia?" *Survey*, Paul Maidment, The Economist, July 15, 1989, 5-20; and "Half-full, Half-empty," Nigel Holloway, Far Eastern Economic Review, Dec. 1991, p.69; "Japan Covets Lead Role in Asia," Robert Thomson, Financial Times, Jan. 11, 1993, p.11.]

American growth is rapidly becoming less true, as trade within Asia becomes more important. For that matter, Japan is itself declining in importance, as compared to a fourth "growth pole" on the East Asian mainland.

Intra-regional trade may have important political implications as well. Hirschman (1980), in a classic study, pointed out the international influence that arises from trade. In time of political or military conflict, a country may be reluctant to side against a large trade partner. Hirschman made it clear that the trade need not be the outcome of a preferential trading arrangement. "For the political or power implications of trade to exist and to make themselves felt, it is not essential that the state should exercise positive action, i.e., organize and direct trade centrally; the negative right of veto on trade with which *every* sovereign state is invested is quite sufficient" (p.16-17). Thus to observe that intra-regional trade shares for groupings that include such large countries as the United States and Japan will necessarily be large, is to observe accurately that the United States and Japan are powerful players. To repeat the central objection to the trade shares however, they cannot be used to assess whether trade is in any meaningful sense necessarily *concentrated* or *biased*, toward the United States or Japan, or toward all the members of APEC, beyond what would be expected from the size of these countries.

1.4 How does intra-ASEAN trade compare to that of other regional groupings (adjusting only for size)?

To obtain a usable measure of regional concentration, we need to adjust the intra-regional

trade shares by a measure of each group's importance in world trade. We want to know if a typical member of ASEAN trades more with other members of the group, than does a typical country located anywhere in the world. The simplest way to accomplish this is to divide each intra-regional trade share by that region's share of world trade, as in the measure reported as Ratio 2 in Table 1. We shall call such numbers concentration or intensity ratios. The intuitive idea is that if bilateral trade takes place in geographic patterns that are simply proportionate to the distribution of countries' total trade, then the concentration ratio should be close to 1. If trade is concentrated within a given grouping of countries, that grouping should show a ratio in excess of 1. [Petri (1993, p.23) calls this ratio the "double-relative" measure of intensity, to indicate that bilateral trade has been deflated both by the total trade of the importing country and the total trade of the exporting country.]

There is another measure, which is closely related to the concentration ratio or double-relative, and has been called simply the intensity coefficient, by some Australian economists in particular.[10] Some of the important lessons to emerge from our econometrics are the same that the Australian group and others have uncovered with their intensity ratios.

As Table 1 shows, the intensity is above 1 for ASEAN, as for most groupings. The conclusion is that trade is geographically concentrated, though less so for the EU and NAFTA. Suddenly, the trading arrangements among LDCs look more effective than those to which industrialized countries belong. On the other hand, there is no *upward trend* in intra-ASEAN or intra-Asian trade intensity. Rather, the large increase in trade among ASEAN countries, or

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[10] Anderson and Norheim (1993a,b), Drysdale (1988), and Drysdale and Garnaut (1982, 1992).

among Asian countries more generally, is fully in line with the large increase in trade undertaken by these countries with the entire world.[11] Thus the standard intra-regional trade shares are misleading both with respect to the level of regional trade concentration and its rate of change.

Various economists have observed the recent regional concentration of trade, and have drawn varying inferences from it. The key difference in interpretation centers on whether the evident regional concentration in trade should be attributed to the natural factor of geographical proximity, or to the artificial factor of preferential trade policy. Two eminent economists, while admitting that existing trade policies must play a role in such statistics, have asserted that the dominant explanation for the high concentration ratios must be geographical proximity (Krugman, 1991b, 19-20, and Summers, 1991, 297-299).

At the opposite extreme, also-eminent economists have dismissed the role of geographical proximity, and asserted that therefore the explanation for the observed concentration must be existing discriminatory trading arrangements (Bhagwati, 1992, 1993a; Panagariya, 1995, pp. 9-10). This issue is important, because each of the two camps engages in a line of reasoning that runs from the positive statements, regarding the effect of policy on trade, to normative statements regarding the *desirability* of regional trading arrangements.[12] Fortunately, it is possible to quantify the extent to which intra-regional concentration is attributable to proximity, as in the Krugman-Summers view, versus existing preferences, as in the Bhagwati-Panagariya

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[11] This is not to say that intra-ASEAN trade has increased at only the same rate with ASEAN global trade. Rather, when two economies are growing more rapidly than others, the best benchmark for the growth in trade between them (relative to the world) is the *sum* of their individual growth rates (relative to the world). This principle emerges from the gravity model, developed below.

[12] The issue is fully explored in Frankel (1996) and Frankel, Stein and Wei (1996).

view.

In the following sections, we shall adjust the bilateral trade figures for the effects of geographical proximity and other non-policy variables that naturally link countries. In this way we hope to isolate the effects on trade of preferential trading policies.

2. Gravity Estimates for Trade Among the ASEAN Five

The key to detecting and quantifying a possible intra-regional trade bias is to establish a "norm" of bilateral trade volume based on economic, geographic and cultural factors. A useful framework for this purpose is the gravity model.[13] Once the norm has been established by the gravity model, a dummy variable can then be added to represent when both countries in a given pair belong to the same regional grouping. The coefficient on this "bloc variable" tells us the extent to which trade within the group has been promoted, whether by explicit preferential trading policies or by less formal socio-political forces. One can check, in particular, how the level of trade and time trend in ASEAN compares with that in other groupings.

2.1 The gravity model

The dependent variable in our gravity estimation reported in this section is the bilateral

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[13] Not long ago, the gravity model was said to be lacking in theoretical foundations. Then the proposition that trade is proportional to the product of partner sizes was shown to follow naturally from models of trade in imperfect substitutes, a la Helpman-Krugman. Today, it seems that the model has an embarrassment of riches: theories competing for the honor of being designated its foundation (Deardorff, 1997). The state of play is perhaps best summed up by pointing out that, if one sets out to explain bilateral trade, one is bound to end up with some version of the gravity model.

volume of total trade, exports plus imports (in logarithmic form). The two most important factors in explaining bilateral trade flows are the geographical distance between the two countries, and their economic size. These factors are the essence of the gravity model and are the source of the name, by analogy to the formula for gravitational attraction between two heavenly bodies.

A large part of the apparent bias toward intra-regional trade is due to simple geographical proximity. Most obviously, proximity reduces shipping costs; it also reduces other costs associated with time lags (interest charges, spoilage, obsolescence, etc.) and cultural barriers (ignorance of foreign customs, tastes, etc.). Indeed, as already noted, Krugman (1991b) and Summers (1991) assert that most of the observed tendency for countries to trade disproportionately with their intra-regional neighbors is due to proximity. Krugman uses this proposition to argue that the three trading blocs are welfare-improving "natural" groupings (as distinct from "unnatural" trading arrangements between distant trading partners such as Malaysia and the United Kingdom under the old Commonwealth preferences). The argument is that natural intra-continental trade blocs are likely to be more trade-creating than trade diverting, because transportation and other distance-related costs inhibit trade between continents anyway, so that there is less trade to be diverted.

Theoretical models and empirical studies alike surprisingly often neglect to take into account distance and transportation costs. Our measure is the log of distance between the two major cities (usually the capital) of the respective countries.[14] We also add a dummy

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[14] We have also tried our tests with a more thorough measure of distance that takes into account land and sea routes, the data generously supplied by Winters and Wang (1991). The results tend to be similar: Frankel, Wei and Stein (1994).

"Adjacent$_{ij}$" variable to indicate when two countries share a common land border.

Entering GNPs in product form is empirically well-established in bilateral trade regressions. It can be easily justified by the modern theory of trade under imperfect competition. Intuitively, one will choose to trade more with a larger country than a smaller country, because it has more varieties to offer, and consumers like variety.

There are also reasons to believe that GNP per capita has a positive effect, for a given size: as countries become more developed, they tend to specialize more and to trade more. An important part of this process is that higher-income countries tend to have lower trade barriers.

A common language can facilitate trade partly because it directly reduces transaction (translation) costs and partly because it enhances exporters' and importers' understanding of each other's culture and legal system, which indirectly promotes trade. To capture this effect, we also include a dummy that takes the value of one if the country pair in question share a common language or has a previous colonial connection. We consider nine languages: English, French, German, Spanish, Portuguese, Dutch, Arabic, Chinese and Japanese.

A representative specification is:

(1) $$\log(T_{ij}) = \alpha + \beta_1 \log(GNP_i GNP_j) + \beta_2 \log(GNP/pop_i GNP/pop_j)$$

$$+\beta_3 \log(DISTANCE) + \beta_4 (ADJACENT) + \beta_5 (LANGUAGE) + \gamma ASEAN_{ij}.$$

The last three explanatory factors are dummy variables. $ASEAN_{ij}$ is an example of the sort of dummy variable we use when testing the effects of membership in a common regional grouping. It is defined as 1 for a given pair when both countries are members of ASEAN, and 0 otherwise. We use the technique of Ordinary Least Squares (OLS) regression, which is capable of testing

the effect of each independent variable while holding constant the effects of the others.

Our base data set covers 63 countries (or 1,953 country pairs) for 1980, 1990, 1992, and 1994. In most cases, results are reported separately year-by-year, since there is enough data to do so, and one wants to see how the coefficients change over time. The source is the United Nations trade matrix for 1980, and the International Monetary Fund's Direction of Trade Statistics for 1990, 1992 and 1994.

2.2 Do the ASEAN Five or East Asia constitute regional trading blocs?

Table 2 shows ASEAN, alone in the world among the six contemporary FTAs tested, as having a statistically significant apparent intra-regional bias in every year tested, 1965 through 1992. The coefficient estimate in 1992 is 1.8, which also happens to be close to the mean, median, and mode of the yearly estimates. The implications is that two ASEAN countries trade six times more than two otherwise-similar countries. (Because trade is expressed in logs, one must take the exponential of the coefficient: $exp(1.8) = 6$.) It is in this sense that intra-ASEAN trade can be said to be high, rather than low.

We know that Singapore plays an entrepot role: its imports and exports are more than 100 per cent of GNP. The island nation accounts for almost half of intra-ASEAN trade. It is possible that the apparent intra-ASEAN bias is partly or wholly a reflection of the extreme openness of Singapore. To examine this, we have elsewhere tried adding a Singapore dummy to the regression, representing any bilateral trade involving the city-state. The Singapore dummy does indeed have a positive and very significant coefficient [1.51]. The coefficient on the ASEAN dummy is reduced to 1.40 but remains quantitatively large and statistically significant.

This suggests that Singapore's extreme openness does not explain all of the apparent inward bias among the ASEAN countries.[15]

The effect in each year is reduced a little more if one allows for the fact that the entire group of ASEAN countries are more open than are typical countries at their stage of development, not just Singapore. This is accomplished by adding a dummy variable representing observations where *either* of the two partners is a member of ASEAN (or likewise with any other grouping). A positive coefficient indicates openness.

ASEAN is indeed open. Part of what appeared to be a proclivity to trade with other ASEAN members was really a proclivity to trade with everyone. But, again, some of intra-ASEAN trade remains unexplained. The bloc coefficient is still in every year highly significant statistically, equaling 1.1 in 1992. These findings -- that ASEAN countries are significantly more open than predicted by the gravity determinants, but that allowing for this openness only reduces the strong estimated bloc effect by a little -- are confirmed in other tests as well.[16] When the data from 1970 to 1992 are pooled together, the ASEAN coefficient is 2.0, or 1.3 when allowing for ASEAN openness.[17]

Allowing for a trend in the coefficient shows no evidence of one, either upward or downward.[18] If we wish to test the effect of the establishment of regional trading arrangement on the *change* in trade, there is no one clear date on which to focus. As already noted ASEAN

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[15] Frankel & Wei (1995d).

[16] Frankel & Wei (1996, 1997).

[17] F & W (1997, Table 1). (Henceforth we use first initials to abbreviate Frankel and Wei.)

[18] F (1997), Appendix Table A5.3.

negotiated a preferential trading arrangement within its membership in 1977, but serious progress in removal of barriers did not get underway until 1987. It was not until January 1992 that the members proclaimed plans for an ASEAN Free Trade Area to be implemented by reduction of tariffs and non-tariff barriers in phases. Thus we choose 1992 as the key date. A test of the *change* in intra-ASEAN trade between 1990 and 1992 shows an insignificant point estimate of .2.[19] Thus one cannot attribute the regional concentration, which shows up in the trade numbers of this period, to the agreements proclaimed in 1987 or 1992.

A question like "what is the effect of ASEAN on trade among its members" can change radically, depending what other bloc effects are being tested at the same time. When we test for an East Asian bloc effect simultaneously with an ASEAN effect, the latter disappears completely. If one is interested solely in formal regional arrangements, then one can accept at face value the first results reported here, i.e., the strong bloc effects for ASEAN. If one considers the larger less formal blocs to be on equal footing a priori, then one will want to accept the verdict of the data that ASEAN has no independent effect: Southeast Asian countries trade a lot with each other simply as an example of the phenomenon that Asian countries trade a lot with each other, not out of any special ASEAN effect.

Wang (1992), Wang and Winters (1991), and Winters and Wang (1994) in gravity tests found the ASEAN dummy to reflect one of the most significant trading areas in the world. They did not include a broader dummy variable for intra-Asian trade (or for the extra openness of East Asian countries in general, or of Singapore in particular). Thus their results are consistent with ours.

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[19] W & F (1995), Table 1.

Continuing the process that began with ASEAN, we consider a sequence of nested candidates for trading blocs in the Pacific.[20] The significance of a given bloc effect turns out to depend on what other blocs are tested at the same time. One way to draw the boundaries is to include all the countries with eastern coasts on the Pacific, which includes Australia and New Zealand along with East Asia. We call this grouping "Asian Pacific." Its coefficient and significance level are both higher than the East Asia dummy. When we broaden the bloc-search wider and test for an effect of APEC, which includes the United States and Canada in with the others, it is highly significant. The significance of the Asian Pacific dummy completely disappears. The East Asia dummy remains significant, though at a lower level than the initial results that did not consider any wider Pacific groupings.

Let us pause to summarize our results so far. When one takes into account the size of the economies, intra-regional trade is high, as much within ASEAN per se as within East Asia more broadly. The same is true when one takes into account the proximity of the countries. These bloc effects could be due either to formal preferential trading arrangements, i.e., the effects of ASEAN, or to informal factors, such as links among Chinese businesspeople. The *rate of increase* of trade within ASEAN or within East Asia, on the other hand, can be entirely explained by the rapid growth of the countries. There is nothing left over to attribute to a bloc that is intensifying over time. Since ASEAN preferences were not operational at the beginning of the sample period, the evidence tends to point more to the informal social forces than to the formal policy measures.

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[20] These results are reported in F (1993, Table 2.2-2.4; 1994).

2.3 Is ASEAN open to trade, or trade-diverting?

The coefficient on the openness dummy tells how much members of a group trade with other countries in general (regardless whether they are in the same group or not). Thus it reflects the extent to which tariff and nontariff barriers have been removed, as well perhaps as non-policy influences on the propensity trade (excluding, of course, income and the geographical variables for which we control), compared to other countries. If this variable is negative, it indicates that the members of the group in question trade less with the rest of the world than would be predicted, perhaps because the PTA among them (if there is one) has diverted trade.

East Asian groupings show up as the most open to trade with the rest of the world, when adjusting for income levels. ASEAN shows little or no evidence of trade diversion. To the contrary, given their stage of development, the ASEAN countries consistently show a level of openness that is higher than for other countries in the sample.[21] If 1990 is taken as the key date for ASEAN, the estimated effect on the change in trade with non-members is also positive.[22] The same openness is revealed for the broader grouping of East Asia.[23] As already noted, allowing for openness changes the estimates of the bloc effects quantitatively, but not qualitatively.

3. Gravity estimates extended to focus on trade with new Southeast Asian partners

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[21] Table 5.2, F & W (1996), and W & F (1997).

[22] W & F (1995).

[23] Table 5.3, F (1994), F & W (1995c, 1995d), F, W & S (1995), and W & F (1995, 1997). These results are similar to those of Dhar and Panagariya (1995), who use the gravity model to find that East Asian countries are open with respect to outside countries, contrary to the usual view.

To focus on Southeast Asia, we now go beyond our earlier analysis by adding several countries to the base data set used in earlier studies: Brunei (a member of ASEAN since 1984), Viet Nam, Cambodia, Laos, and Myanmar.[24] (Trade data for Brunei, the Indochinese countries, and Myanmar, comes from the IMF country desks.) Unfortunately, data for the three Indochina countries and Myanmar (formerly known as Burma) are not available before 1990.

3.1 Including Brunei as the sixth member of ASEAN

Table 3 is the first to include Brunei in the definition of ASEAN, for the period 1980-1994. The other major respect in which the results from here on differ from those reported in Table 2, is that the income of the importing country, *j*, is allowed to have a different coefficient from the income of the exporting country, *i*. This, in turn, requires that the dependent variable be defined as the log of exports from *i* to *j*. The estimates for the gravity variables are generally similar to before, although the Adjacency and Language variables have lost their ability to explain bilateral trade in the case of the 1980 regression. As before, the ASEAN bloc is highly significant in 1980, with a small downward trend subsequently. The magnitude of the bloc effect is in each year somewhat smaller than it was without Brunei. (Among the other regional groupings, EU and NAFTA have gained significance, while Mercosur has lost some.)

Table 4 adds dummy variables for openness of the various regions with respect to imports and exports, as well as special dummy variables for Singapore's openness. The Singapore effect is very strong in magnitude, significance, and consistency (though declining slightly over the last

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[24] The addition of these countries is one way that the trade results reported here differ from those in earlier studies of ours, such as F (1993), F & W (1994, 1995ab), and F, W & S (1995).

fifteen years). In 1990, Singapore imported five times as much as a typical country of its size and other characteristics, and exported six times as much [exp(1.60)=4.94 and exp(1.75)=5.75]. The openness of the other ASEAN countries is no longer strong enough in most years to be statistically significant. As in the case of the ASEAN Four, the presence of the openness terms (in particular, for Singapore), reduces the significance of the regional bloc effect. In this table, this actually means that the ASEAN bloc loses significance for the period 1990-94. One possibility is that the addition of Brunei to the set affects the results. As a predominantly oil-exporting country, it naturally trades more with countries outside its region than does a typical country, which would tend to reduce the apparent tendency toward intra-group trade.[25]

We have also tried adding a new variable to measure the *remoteness* of the exporter and the importer from the world at large. It is computed as the weighted-average distance from trading partners, a separate variable from bilateral distance. (The weights are incomes.) The idea is that remote countries such as Australia and New Zealand will trade more with partners at a given closeness. These results are reported in Appendix 1. The remoteness variable itself is not successful here. It does, however, have the effect of increasing the significance level of the ASEAN bloc effect.

We have seen that the *level* of intra-group trade bias and the *trend* can be very different.

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[25] One cannot take comfort in the idea that a country as small as Brunei will not have a major effect on the econometric estimates. A small country counts at least as much as a medium-sized one. (To the extent that large-country data are thought more informative than small-country data, heteroscedasticity may be a problem. We have tried an appropriate remedy, and found that the basic results do not change; F & W, 1993b. But we have not specifically done this with Brunei in the sample.)

Intra-ASEAN trade is high, adjusting for some factors, but is, if anything, declining over time. If we wish to test the change over time explicitly, it is best to do so by taking first differences of the equation. The price is that such unchanging variables as proximity, common borders, and common languages will be lost. The results will appear to be less precise.

Appendix Table 2.1 shows that the ASEAN countries became significantly more open in the 1980s and early 1990s. The ASEAN bloc effect diminished over this period. These results are also borne out in the subsequent tables.

3.2 Extending the tests to Indochina and Myanmar

In Table 5 we focus on the countries of Indochina, plus Myanmar, for 1990-1994. (The data are not available for 1980.) These countries have been largely cut off from trade with market economies for the last twenty years. They are now beginning to re-integrate themselves into the world economy, with Viet Nam in the lead. An important component of this process is the re-establishment of relations with their southeastern neighbors. Vietnam became a member of ASEAN in 1995. Cambodia and Laos may join as early as 1997. Myanmar is supposed to be granted observer status in 1996, and to become a full member in 2000. There is an irony in the importance the Indochinese countries attach to joining ASEAN: the group's main function, in its early years, was as a security alliance against communism.

As one would expect, these countries still show an extreme negative openness effect. As of 1992, their tendency to import was less than 8 percent as great as other countries' [exp(-2.58)=.076], even adjusting (as always) for their levels of income, etc. Their tendency to export was even lower, only 6 percent as great as other countries' [exp(-2.76) = .063]. By

1994, some opening had become evident, especially on the export side. Indochina and Myanmar now have an estimated tendency to import that is 12 percent that of other countries' [exp(-2.06) = .127]. Their tendency to export is 14 percent that of others' [exp(-1.99)=.136].

Obviously there is still enormous room for liberalization. If these formerly autarkic countries restore normal trade relations with the rest of the world over the coming decade, the gravity model predicts that their trade will grow seven-fold from 1994 levels. In addition, their trade will grow in proportion to their incomes. If they grow more rapidly than the worldwide average, their trade levels will grow correspondingly more rapidly.

The gravity model can estimate what projected growth rates will do to Indochinese trade. This requires plausible estimates of growth rates in Indochina as well as the rest of the world. Viet Nam has been growing at about 8 per cent a year, about 6 percent a year above the world average, and is forecasted to continue to do so.[26] The same is true of Thailand (and several other ASEAN countries). In our gravity model estimates that include per capita GDP in the equation, it appears that for every one percent increase in a country's rate of growth of per capita income, relative to the world average, its trade with each partner also grows about one percent faster. It follows that Viet Nam's total trade is expected to grow about 6 per cent a year faster than the worldwide average (which is about 4 percent per year), and its trade with Thailand to grow about 12 percent a year faster. This is on top of the seven-fold increase predicted during the period during which Vietnam becomes integrated into the world economy. Needless to say, these projections are very rough and need to be refined. This is a possible subject for future research.

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[26] Merrill Lynch, *Global Economics and Currencies*, Nov. 15, 1995.

The term labelled "ASIND Bloc" in the table estimates the effect of a dummy variable for trade within the group that includes Indochina and Myanmar along with the ASEAN Six. In other words it tests for a concentration of trade within the group that is scheduled to constitute ASEAN in the year 2000. Its effect is estimated to be positive in all three years, 1990, 1992, and 1994, but is not statistically significant. At the same time, we include a variable for the original ASEAN6. Its point estimate is negative, but again not statistically significant. At this point, we have 26 dummy variables (not counting language and adjacency). Singapore, for example, is counted six times (ASEAN bloc, Indochina-ASEAN bloc, ASEAN export openness, ASEAN import openness, Singapore export openness and Singapore import openness), even without the East Asia grouping. With this many parameters estimated at once, the reliability of each is diminished.

3.3 Australia and New Zealand

Finally, we consider the role of Australia and New Zealand in the region. These two countries underwent thorough liberalization programs in the 1980s. In 1983 a Australia-New Zealand Closer Economic Relations Trade Agreement (ANZCERTA or ANZCER) superseded and expanded a previous accord, to cover all trade. It covers non-tariff barriers, subsidies, countervailing duties, anti-dumping, and government procurement. A 1988 accord expanded the CER to encompass the use of national treatment for trade in most services between the two countries. The agreement was again slightly expanded in 1992. Thus it is the deepest integration agreement in the Pacific.[27] Talks were held in March 1995 over a closer linkage of ASEAN

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[27] WTO, p.36.

countries to the Australia-New Zealand Closer Economic Relations Trade Area. It was argued that such linkage would attract investment to ASEAN, and would help prod AFTA trade liberalization.[28]

Table 6 focuses on the role of the two antipodean countries. As in earlier estimates, they show up as relatively open, particularly on the export side.

In earlier results they were found to trade even more with each other than with third countries, a strong bilateral effect attributable to the ANZCER. In Table 6 that bloc effect is a bit diminished, in both magnitude and statistical significance. The reason is plain to see. The equation also includes a dummy variable for trade within an "ASANZ" grouping, which includes the ASEAN Six together with Australia and New Zealand. The ASEAN-ANZ bloc effect is very strong, in level as well as statistical significance. As was also the case with the East Asia bloc (and, to a lesser extent, the ASEAN-Indochina grouping), the bloc effect for ASEAN per se seems to lose its significance when the equation simultaneously tests for large groupings in which the ASEAN countries are included.

Recall that Appendix 2 tests bloc effects in terms of their change over time. Appendix Table 2.3 adds the result that Indochina became significantly more open in the early 1990s. Appendix Table 2.5 suggests that, while the ANZCER bloc has strengthened over time, trade links have weakened between ASEAN and ANZCER, as well as among the ASEAN countries, especially in the 1980s. That is, although the ASEAN-ANZ effect is strong throughout the period, its decline over time is also statistically significant.

As already noted, it is natural that the estimates of the bloc effects vary, depending on

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[28] Jaggi (1995, p.8, 9). FT, 7/27/95 and 12/15/95.

what groupings are included in the equation. But how should one ultimately think about the results? On the one hand, if one is interested in testing the hypothesis that formal regional trading arrangements have effects on trade, then one should just focus on the ASEAN (and ANZCER) results, and ignore equations that feature larger groupings of country that do not coincide with existing regional trading arrangements. On the other hand, one is also often interested in knowing the strength of trade links between, for example, Southeast Asia and Australia-New Zealand. Looking at the simple magnitude of trade flows or at trade shares is not very useful. Adjusting for such factors as size and proximity produces more informative measures of trade links. The gravity results for these ad hoc groupings are perhaps best viewed as sophisticated versions of descriptive statistics.

4 The role of Foreign Direct Investment

Total net Foreign Direct Investment into East Asian developing countries has been estimated at $43 billion in 1994.[29] It has been doubling every two years since 1987, and is up more than 32-fold since 1970 (admittedly, in terms of current dollars). Accounts of the bloc that is said to be evolving in Southeast Asia, or all of East Asia, tend to emphasize foreign direct investment almost as much as they emphasize trade. Thus we devote a substantial portion of

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[29] The source is the World Bank's Debt Tables, 1994-95. [Jasperson, Aylward and Sumlinski (1995, p. 23), report a much lower figure of $7.6 billion a year, computed from IMF Balance of Payments Statistics. (This is more than triple the rate of the 1980s, which was in turn more than triple the rate of the 1970s.) Most likely the huge discrepancy reflects the inadequacy of balance of payments statistics for this purpose. Japan's MoF alone reports $6-$9 billion.] The strong upward trend continued in 1995 as well.

this paper to the subject.[30]

4.1 US FDI

The view of Foreign Direct Investment (FDI) as another form of international investment,[31] flowing from capital-rich countries to capital-poor countries has an obvious appeal in the case of Southeast Asia. The mainstream view, however, is that FDI is very different from portfolio investment, which is driven by macroeconomic considerations such as interest rates and exchange rates.[32] The mainstream view borrows, rather, from the industrial organization literature, emphasizing that FDI is undertaken by large monopolistic corporations that have a special advantage in technology, management skills, or brand name, and that it goes into host countries that have the attractions of either cheap inputs or a large market that is removed from the rest of the world by either transportation costs or trade barriers.[33]

Until the 1980s, the United States was the dominant investor in Southeast Asia, and the mainstream view seemed to fit well. Early in the postwar period, the Philippines was the dominant destination, and selling into the local market was the dominant motivation. U.S. FDI increased rapidly in the 1970s, especially in Indonesia (much of it in the oil sector), but also in Singapore (where Americans were attracted by the liberalization of the economy). By 1988,

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[30] Recent writings on FDI and possible blocs in East and Southeast Asia include Katzenstein and Rouse (1993), Yue (1994), and Hirata (1994).

[31] E.g., MacDougall (1958).

[32] Fry (1993), however, models FDI into Southeast Asia as determined by macroeconomic factors, much like portfolio investment.

[33] Classic citations include Kindleberger (1969), Dunning (1976), Hymer (1976) and Caves (1982). A recent collection on FDI is Froot (1993).

Singapore was said to be the location of more than a quarter of U.S. FDI in Asian manufacturing, particularly in electronics. Investment in Malaysia went specifically into semi-conductors, which have come increasingly to be sold elsewhere in Asia.[34]

4.2 Japanese FDI

Japanese FDI has received much attention in the last ten years, and is the focus of much of the speculation regarding a Tokyo-centered yen bloc in East Asia. While the Japanese data are subject to very large measurement problems, some major trends are evident.[35]

In the aftermath of World War II, Japanese investment was small, and (in the case of Asia) concentrated in the extraction of natural resources, particularly in Indonesia. Substantial Japanese investment dates from 1972, when the Japanese government removed controls on outward investment. One contributing factor was the beginning of U.S. irritation with Japan's balance of payments surpluses. FDI could be expected to reduce the overall balance of payments surplus immediately, and perhaps the trade balance subsequently. Direct investment in Asian manufacturing [especially in Indonesia and Korea] was heavy in the textiles and electronics sectors, with most of the output being exported. By the late 1970s more Japanese FDI than US FDI was going into East Asia.

The first wave of yen bloc theories matched the big wave of Japanese FDI in the 1980s. Rapid growth in the host countries was a major attraction, in the case of Southeast Asia. The

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[34] Encarnation (1992).

[35] Ramstetter (1991a, b), Graham (1994) and Stein (1995) explain the data problems. Other general reviews of Japanese FDI include Komiya and Wakasugi (1991), Encarnation (1992), and Froot (1990).

very sharp appreciation of the yen against the dollar in 1985-87, and the subsequent bubble in prices of land and equity in Japan, encouraged many Japanese corporations to locate some operations offshore. Environmental concerns led some polluting industries to relocate.[36]

While manufacturing received the most attention, Japanese investment in the commercial/financial sector was considerably greater in the 1980s than in manufacturing (worldwide). Investment in real estate was also large, while the share of investment in the primary sector, like that in manufacturing, fell off sharply from the high levels of the 50s-70s.

Hong Kong, Singapore, Thailand, and Malaysia joined Indonesia as the leading Asian destinations of Japanese FDI in the 1980s, as did China in the early 1990s.[37] Since much of Japan's FDI went to East and Southeast Asia, it is deemed an important component of the yen bloc hypothesis. Around 1987, the stock of Japanese FDI in East Asia surpassed the stock of US FDI there. Over the period 1987-91, Japanese FDI constituted 96 percent of total FDI into Indonesia, 26 percent of FDI into Malaysia, 33 percent into the Philippines, 21 percent into Singapore, and 51 percent into Thailand. Graham and Anzai (1994, p.10, 12) point out that Japanese FDI makes up a high percentage of total FDI only in countries where FDI does not make up a high percentage of total fixed investment. For this reason, Japanese FDI is in all countries under 10 percent of gross domestic capital formation.

The share of mining in Japan's Asian FDI is much lower than in the past, with manufacturing, commerce and finance constituting the major categories. Within manufacturing,

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[36] Yue (1994, p.70), and Lee and Roland-Hoist (1993) for the case of Indonesia.

[37] FDI into China is discussed and analyzed in Wei (1996). Korea's share of Japanese FDI is down sharply from the pre-1973 period.

textiles constituted fully one-third in the 1950s and 1960s, but are now down to 7 percent. Electrical goods have risen to 27 percent, followed by chemicals, metals, machinery, transport and foodstuffs. Within electrical goods, the greatest shares were going to Malaysia and Thailand by 1990, representing very strong growth relative to ten years previously.[38]

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Labor costs are undoubtedly the greatest single factor behind Japanese FDI in Southeast Asia. In 1989, the ASEAN Promotion Center on Trade in Tokyo surveyed a large number of firms. Of those who had already invested in Southeast Asia, 61.2 percent cited low-cost labor as the reason, higher than in any other area. The second most-cited reason (40.1 percent) was access to the local market, which includes tariff-jumping. Of those contemplating investing in Southeast Asia, exporting back to Japan was the number two reason (36.8 percent), after low-cost labor (58.8 percent); these two reasons are of course entirely consistent.[39]

Another motive, relevant in such sectors as textiles and consumer electronics has been quantitative restrictions on imports into the United States, as companies in Japan (or Hong Kong or Taiwan) switch production to Southeast Asian countries that are not yet constrained by their quotas. Other relevant factors within the host countries include local tax breaks and subsidies, infrastructure, macroeconomic and political stability, and growth rates.

Japanese FDI fell off in 1990 - 1992 (though by less in Asia than in the rest of the world). Several macroeconomic explanations were evident: monetary policy tightened, Japan

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[38] Patterns of horizontal division of labor across Southeast Asian countries in specific industries are described in Doner (1991, 1993) and in the contributions to Doherty (1994).

[39] Tokunaga (1992, p.17).

went into recession, corporate and bank balance sheets were ravaged by the decline in stock and land prices, and the appreciation of the yen eased a bit.[40] In 1991 the ratio of the accumulated Japanese FDI stock in East Asia to the US stock reached its peak, at 1.75.

The decline in Japanese FDI flows levelled off in 1993, however. Japanese multinationals began a renewed expansion in 1994, especially in Southeast Asia, where their investments were up 52 percent (and China), responding in part to a renewed appreciation of the yen to unprecedented heights. Thus the yen bloc hypothesis stays alive.

We found in sections 2 and 3 of the paper that the growth of Japanese trade with Southeast Asia, which appears to be extremely rapid, can be entirely explained by the rapid economic growth of Japan (until the 1990s) and of the other Asian countries. It turns out that this is also true of Japanese FDI. While a full analysis should await an application of the gravity model, a simple calculation illustrates the point. If one scales by the host region's size in world trade, one finds that Japan's investment in East Asia (and Australia) is almost exactly in proportion to their size. There is no evidence of regional bias. Japan's direct investment in the United States and Canada, on the other hand, is more than twice what one would expect from their share of world trade. Japan's investment in Europe is about half the continent's share of trade. As with trade, there is far stronger evidence of a Pacific-wide bloc that includes North America, than of an exclusive East Asian bloc.[41]

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[40] Stein (1995, p.28) finds that credit market conditions in Japan and the exchange rate are strong explanatory factors for FDI into Asia.

[41] F (1993, p.67-69). The statement extends also to monetary and financial links. The dollar is still by far the leading currency of Asia, not the yen (F & W, 1994a).

4.3 Other FDI in Southeast Asia

Although the United States and Japan used to dominate FDI in Southeast Asia overwhelmingly (together with some European investment), this has changed recently. The East Asian NIEs have become major investors in the region. In one respect the impetus is very different from the case of Japan. Japanese investors were sometimes unwelcome, in Southeast Asia (and China and Korea) where memories of the 1930s and 1940s remained. The NIEs did not have this historical baggage. To the contrary, most of the investors in Taiwan, Hong Kong and Singapore were ethnically Chinese, and made maximum use of connections (*guanxi*) to local businessmen who were also Chinese. In another respect, however, investment from the NIEs follows the pattern set by Japan: companies have responded to rising wages and appreciating currencies at home by setting up manufacturing operations in neighboring countries with lower labor costs. In Korea and Taiwan, rising demands for domestic goods and labor, which the government had for a time succeeded in damming up, burst out in the late 1980s in the form of real currency appreciation and real wage increases (especially 1987-1988). The impetus to FDI followed.

We have already listed political instability as a concern to foreign investors. This is particularly relevant in the case of investment coming from Hong Kong, where some firms are apprehensive regarding China's 1997 takeover of their home base.

Over the period 1985-91, Taiwan's new direct investment in ASEAN was almost as great (18 percent of the total inflow) as Japan's (21 percent). Adding in either Korea (5 percent), Hong Kong (6 percent) or Singapore (5 percent) easily puts the NIEs ahead of Japan (let alone Europe at 14 percent, or the U.S. at 7 percent).

Already, the NIE investors have run into rising labor costs in ASEAN countries, particularly Thailand and Malaysia, and are looking to still-cheaper China or Indochina. Overloaded infrastructure is said to be another factor pushing multinationals to move on. . In 1992, Taiwan companies' investment in the ASEAN Four declined sharply. They are said to be turning to Vietnam, and the Koreans to Myanmar. Both, along with Hong Kong, are of course also investing heavily in China.

Taking the cycle to the next stage, the ASEAN Four are themselves beginning to invest in China and Vietnam, much as the NIEs began investing in the ASEAN Four a decade ago, and Japan in the NIEs two decades ago. It has been reported that 10-15 percent of foreign investment in China is coming from ASEAN.[42]

4.4 FDI and Trade

Some readers of our earlier work have responded to our finding of no trend toward an Asia bloc in trade by suggesting that there has been a strong trend toward such a bloc in FDI, and that this will show up in trade with a lag. We evaluate this effect in the next sub-section.

There is certainly a long tradition of connecting FDI with trade. FDI can lead to: (1) *higher exports* from the source country to the host, especially when the investment is in the retail sector, or when the subsidiary has a relative proclivity to import intermediate inputs from the mother country, a habit that is often attributed to Japanese companies in particular; (2) *lower exports* from the source country to the host, when the aim of the investment is to circumvent

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[42] "Japan, NIEs target China, Indochina," *The Nikkei Weekly*, Jan. 11, 1992, p.20; "Investment in Asia: The Yen Bloc Breaks Open," *The Economist*, 1996, p.72.

trade barriers, so that sales within the host market substitute for shipments from the source country; and (3) *higher imports* into the source country from the host country, especially when the motive for the FDI is cheap labor in manufacturing or raw materials in extractive industries.[43] The experience of U.S. multinationals has been extensively studied; the usual finding is that U.S. FDI abroad leads to increased U.S. exports and an improved U.S. trade balance.

Kojima (1985) claims that Japanese FDI is especially trade-oriented, compared to U.S. FDI. Part of the theory is that the Japanese corporations doing the investing are smaller and more competitive than the U.S. multinationals. This is the opposite of the Dunning-Hymer-Kindleberger theory of FDI in general, and the opposite of the popular American conception of "Japan Inc.", in particular.[44] Kojima's characterization does seem to fit some industries, such as electrical machinery, one of the two largest manufacturing sectors for FDI. Japanese companies in this sector report that over 2/3 of the sales of their affiliates are exports (to various destinations). This pattern is not entirely typical, however. Transportation machinery sector (chiefly autos and trucks) is at the other extreme: only 20 percent of affiliates' sales were

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[43] The logical fourth possibility, lower imports into the source country from the host country is dismissed by Graham and Anzai (1994, p.31) as not relevant. But Kwan (1994, p.36-37) points out that Indonesia's exports of raw materials (crude petroleum) to Japan, for example, may fall if Japanese affiliates take over the processing (refining) of the materials on location.

[44] Kwan (1994). In one respect, everyone agrees that Japanese FDI in Southeast Asia fits the "Japan, Inc." mold: it has been helped along by the sogo shosha, the large trading companies, especially in textiles. Whether the Japanese government in any sense centrally directs the operations of the multinationals is much more controversial, however. The volume edited by Frankel and Kahler (1993) contains some debate on the subject, between economists and political scientists.

exports.[45] Urata (1993), Bergsten and Noland (1993, p.34), and Encarnation (1992, p.19, 149) argue that Japanese affiliates in East Asia are on the whole *less* export-oriented than American affiliates there.

Another issue is whether Japanese affiliates are more prone than those of other countries to import intermediate inputs from the source country. Kreinen (1989), in a study of affiliates in Australia, claims that they are. Others respond that the tendency to import inputs from the mother country is simply an attribute of recent FDI, and that Japanese investment in Asian and the Pacific is recent.[46]

4.5 Estimates of the influence of accumulated bilateral FDI on trade

The claim that there has been a trend toward an FDI bloc in East Asia, and that this can be expected to show up in trade patterns with a lag, is well worth investigating. It can be broken into its two constituent propositions: a regionalization of FDI in East Asia, and an effect of FDI on bilateral trade. We consider each of these propositions in turn, beginning with the latter.

Thus in this section, we add bilateral FDI as a variable to explain bilateral trade in the gravity equation. Before doing so, we must acknowledge two serious problems. First is the likely endogeneity of FDI. We address this problem, in a preliminary way, by putting only the

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[45] Graham and Anzai (1994, p.15).

[46] Froot (1991, p.8). Hufbauer, Lakdawalla, and Malani (1995), in a study of FDI by the U.S., Japan and Germany, "surprisingly...find that Japan is the only country where outward DFI consistently raises imports more than exports." But Fry (1993, p.49) finds that this is also true of aggregate FDI into Southeast Asia.

lagged cumulative stock of bilateral FDI on the righthand side of the equation. The idea is that this variable is predetermined, though in a cross-section study that is not a complete solution. Later, we will address the endogeneity of FDI more fully.

Second is the problem of data. We have already noted the poor quality of the Japanese data, which at least have the virtue of being available. For most pairs of countries data are simply unavailable. There is no multilaterally-gathered universal data bank for bilateral FDI as there is for bilateral trade. Most empirical studies focus on a few key investors. There are comparisons of U.S. FDI by partner, of Japanese FDI by partner, and of U.S. vs. Japanese FDI into East Asian countries. But there are no multilateral studies, so far as we are aware.

We have what we think may be the most extensive collection of FDI data among pairs of countries. Most importantly, for present purposes, it includes not just FDI into ASEAN by the U.S., Japan, and European countries, but also FDI by Korea and Taiwan. It also includes FDI undertaken by Thailand, though unfortunately that is the only Southeast Asian country on which we have data as a source of bilateral FDI going into other ASEAN countries. All the major East Asian countries are included as destinations. Table 7 reports data availability in more detail. The source is the OECD's *International Direct Investment Statistics Yearbook.*

Here we focus on the impact of FDI on exports from the source country to the host country. [In the future we hope to look at possible effects of imports back into the source country.] Since we are forced to drop all observations for which the FDI data are missing, we must drop the observations on exports from ASEAN countries (except Thailand) to other ASEAN countries.

In Wei and Frankel (1997, Table 4) we looked at the effect of the 1990 stock of bilateral

FDI on bilateral 1992 exports. Some important changes in the gravity estimates come about simply from the reduction in sample size (to 347) brought about by discarding observations without FDI data. While the GNP, distance, and adjacency terms are similar, the estimated effect of language falls somewhat, and the coefficient of the exporting country's GNP/capita becomes negative, though insignificant. The East Asian bloc effect becomes insignificant (though the APEC bloc effect remains, as do the Americas and EC bloc effects). But East Asia remains by far the most open of the major parts of the world.

The stock of FDI has a positive effect on exports. The effect is extremely high in significance (t-ratios of 7 or 8), and between .14 and .17 in magnitude, depending on whether one controls for the openness of the East Asian countries and the other groupings. Each one percent addition to the stock of investments in a country leads to an increase in exports to that country of about 0.17 percent. There is little change in the other coefficients, except that the coefficient on the GDP/capita of the exporting country now becomes a highly significant negative number (-.52 to -.53). The addition of the FDI variable does nothing whatsoever to perk up the East Asia bloc effect (though it does cause a big increase in the Western Hemisphere bloc effect).

Now in Table 8, we extend the tests to 1990 and 1994, and focus on the narrowly-defined, or formal, regional trading arrangements, rather than the broader grouping. The key point is that the effect of the stock of FDI is again highly significant statistically, estimated at .09, .07, and .19, respectively. It appears, again, that FDI helps promote exports from the source country to the destination country.

The results for the gravity variables are similar as before, though the coefficient on

adjacency loses some significance, while that on common language loses all significance, probably because of high multicollinearity with FDI. (Income per capita is omitted from these results.) Alone among the blocs, the Australia New Zealand Closer Economic Relationship remains highly significant. We don't have enough data on intra-ASEAN investment for a true test of an ASEAN bloc effect. The coefficient on Thai exports to the rest of the ASEAN in 1990 is positive, but not significant. (The data do not exist to support even this test for the years 1992 and 1994.)

Appendix Table 3.1 includes remoteness as a determinant of trade. For the first time, its coefficient turns out to be of the hypothesized positive sign, and often highly significant. The bloc effect for trade between Australia and New Zealand turns negative. This is interesting, as these two countries are the most remote in our sample. The result seems to suggest that the trade link is the result of the fact that they are located so far from the rest of the world that they are dependent on each other, rather than a result of the ANZCER. The performance of the remoteness variable has been sufficiently unreliable, however, that we would not want to put too much weight on this conclusion.

Table 9 adds openness of the various groupings as explanatory variables. ASEAN still appears open to foreign products, even holding constant for the large amount of FDI it has been receiving. Some of the other coefficients diminish in size and significance, such as language and the Thai-ASEAN bloc effect.

Table 10 adds, in addition to the usual openness variables, a dummy variable for the openness of Indochina [including Myanmar]. Indochina still has a very negative openness coefficient. More surprisingly, the coefficient for Thai exports to other ASEAN countries has

now turned significantly negative. [We did not include a dummy variable for Thai exports to Indochina in addition to the members of ASEAN.] Table 11 adds a dummy variable for the ASEAN-ANZ bloc. Its coefficient is positive, but not significant.

Thus FDI has a clear effect on exports throughout. This effect appears to undermine some of the other effects, such as the common language variable and the ASEAN and ANZCER bloc effects. Even if one takes the equation at face value, there is insufficient data to pinpoint the effects of specific regional groupings. But one must also worry that bilateral FDI may be endogenous, that it is determined by the same factors that determine bilateral trade, and that it is improperly usurping some of their role in these tests. We now turn to the determination of FDI.

4.6 Determination of bilateral FDI

We now estimate a gravity model of the determination of FDI, analogous to the standard one for trade.[47] The results presented here are only meant to be a start. They omit many of the possible determinants that have been identified in the literature on FDI. Nevertheless, the gravity framework has its attractions, notably a much larger number of observations than in the typical study of FDI.

To the extent that the motive for FDI is to sell into the local market, one might expect distance and transport costs to have, if anything, a positive effect on FDI, thus reversing a key

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[47] Eaton and Tamura (1994, 1996) estimate bilateral gravity models for FDI. But they include only two source countries: the United States and Japan. They find that features of a country associated with more trade with the U.S. or Japan are also associated with more FDI from those countries.

plank of the gravity model. On the other hand, to the extent that the motive is exporting back to the source country, distance should have a negative effect, just as it does for trade. The same is true if distance matters because it breeds unfamiliarity with local culture.[48]

Table 12 is the baseline gravity model of bilateral FDI. The coefficient on distance is even more significant and negative than is the case in the gravity model of trade. Similarly, the coefficient on language (which also includes former colonial links) is extremely high and significant. In 1992, the existence of linguistic links raised the stock of FDI by about nine-fold ($\exp(2.24) = 9.4$). In this light, it is not surprising that the addition of FDI into the trade equation in the previous section deprived the language variable of its statistical significance. The coefficients on GDP are also highly significant. But one knows that there is probably a bad misspecification in this equation in this regard. We have not yet included terms for GDP per capita, which would capture the fact that rich countries tend to be the source of FDI.

The effects for ANZCER and the other blocs are high in magnitude and significance. But for present purposes we are most interested in intra-ASEAN investment. Unlike the other bloc effects, the Thai-ASEAN link in 1990 was a large and statistically significant negative number. Reports of important inter-ASEAN FDI tend to be more recent than 1990. The lack of data on FDI by other countries in the region, or even on Thai FDI after 1990, seriously limits this investigation.

Table 13 introduces dummy variables to capture the openness to FDI of various groupings. ASEAN is particularly welcoming to "imports" of FDI, as are ANZ, NAFTA, and

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[48] Eaton and Tamura (1996) find in their gravity model that distance inhibits FDI much less than it inhibits trade.

Mercosur. Major sources for FDI, even after taking into account their size, are North America, the two European groups, and ANZ. Thailand also has a positive propensity to export FDI, though it is only marginally significant. But the coefficient on Thailand's FDI in the rest of ASEAN remains very negative as before. The results are similar when allowing for the level of openness to FDI in Indochina -- or the lack thereof (Table 14). There is also no support for an FDI bloc among ASEAN, Australia and New Zealand (Table 15).

To sum up the results on the determination of bilateral FDI, they seem to be similar to the determinants of bilateral trade, which explains the effect that lagged FDI had in the earlier trade equations in the preceding section. Without more data, we as yet cannot draw many more conclusions.

4.7 Future extensions of the analysis regarding FDI and trade

Three extensions are required, in increasing order of complexity.

We have not yet used the gravity model to test whether Japan (or the United States) has an extra propensity to invest in ASEAN beyond what would be predicted by incomes, etc. Nor have we tested whether ASEAN countries' exports are more sensitive to inward FDI from Japan or from the United States.

We have not yet estimated a complete system consisting of bilateral export equations and bilateral FDI equations side-by-side. That trade and FDI seem to depend on the same set of variables is not a problem, until we start to worry about simultaneous causality between the

two.[49] We think that the stock of FDI influences trade, and yet the stock of FDI is endogenous. To estimate the simultaneous relationship, we need an instrumental variable. The one we have come up with is a dummy variable representing the existence of an investment tax treaty between a pair of countries. This variable is a significant determinant of bilateral investment and yet, we hope, is uncorrelated with the non-gravity determinants. Though we have had some success with this variable[50], we have not yet applied instrumental variables technique to the question of ASEAN per se.

High priority also goes to including per capita incomes in the equation.[51] The next step would be to include factor endowments or perhaps wage rates. We have tried entering international differences in factor endowments (capital/labor ratios, land/labor ratios, and schooling levels) as determinants of bilateral trade in the gravity model. This was not very successful. The tendency for rich countries to engage in more trade than poor countries is far more powerful in the data than any tendency for capital-rich countries to trade with capital-poor countries. This supports the predictions of the modern model of trade in imperfect substitutes, a la Helpman-Krugman, versus the classical theory of factor-endowment trade, a la Heckscher-Ohlin. The model of FDI as exploiting cheap inputs -- unskilled labor and natural resources --

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[49] Graham (1994) points out the simultaneity, estimates a gravity equation for both FDI and trade (U.S. bilateral), and shows that the residuals are correlated. Eaton and Tamura (1994) do the same, using both Japan and the United States as source countries. But without benefit of instrumental variables that are excluded from each equation, one cannot disentangle the causality.

[50] Frankel (1996, Ch. 6). The apparent effect of FDI on trade vanishes with the instrumental variables technique.

[51] Or, equivalently, population. Eaton and Tamura (1996) argue that population is a key determinant of the extent to which corporations exploit a technological advantage via FDI or via exports.

seems particularly relevant to Southeast Asia. Perhaps differences in factor endowments would determine FDI better than they seem to determine trade.[52]

One might expect that, eventually, the flow of capital (human as well as non-human) from rich to poor would equalize capital/labor ratios and thus equalize income levels.[53] (The same is true of trade, under the Heckscher-Ohlin theory, if the same production technology applies everywhere. But it doesn't, and FDI is probably a more rapid conduit of technology transfer than is trade.) The equalization would of course take a very long time. But, in any case, there are two sorts of shorter-term cycles that are driving FDI in Southeast Asia for the time being.

The first is the product cycle.[54] Innovation in the United States yields a new product, say semi-conductors. Initially, it is produced in the U.S., with a technological process that is intensive in physical and human capital. Then, after awhile, the engineers figure out how to produce the same product with less capital and more labor and land, and the company relocates the manufacturing operation to countries where those factors are more abundant.

The second cycle evident in Asia is that of the "flying geese" metaphor. Just as cheap labor was in the past a major motive behind U.S. and Japanese investment in Singapore (and the other NIEs), when the cost of labor and land there rose, cheap labor became a reason for Singapore and the others to invest in Malaysia, Thailand, and the other ASEAN countries. Now rising costs in those countries are motivating FDI into Indochina. This cascading of FDI is an

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[52] Militating against this outcome is the huge amount of FDI from Japan to the United States.

[53] MacDougall (1957).

[54] Vernon (1966).

important component of the famous "flying geese" pattern.[55] To model this process would require making income endogenous, as in the "conditional convergence" growth literature, at the same time that factor endowments are introduced.[56]

5. Conclusions Regarding Strategies for ASEAN Trade Policy

What would be the effects of the ASEAN Free Trade Area, if it came to full fruition? DeRosa (1993b, pp.5-6; 1993c) uses a Computable General Equilibrium (CGE) model to find that an AFTA would be trade-creating, that it would expand intra-bloc trade as much as 21 per cent. But MFN liberalization on the part of ASEAN members (even non-reciprocal) would raise trade by three times as much. In his view, the problem with purely intra-regional liberalization, according to such models, is that the Southeast Asian countries mostly produce the same sorts of things. It is necessary to promote trade with outsiders, especially developing countries, to get larger welfare gains. "Overall, the findings...cast substantial doubt on the desirability of

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[55] Akamatsu (1962), Yamazawa (1990), and Kwan (1994). The inverted "V" pattern was intended by the originators of the flying geese metaphor simply to describe the rise and fall of a given Asian country's comparative advantage in a given industry (say, textiles or toys, followed by chemicals, steel, autos, and high-tech). We think that the same metaphor can be made more vivid by envisioning Japan as the lead goose in a horizontal "V," flanked by Singapore and Hong Kong, and Korea and Taiwan, then followed by Malaysia and Thailand, and Indonesia and the Philippines, and finally China and Indochina bringing up the rear (and India as well; some geese are very much larger than other geese). The lead goose ascertains which economic territory is the most rewarding to enter, and the others in sequence follow the lead of those that went before.

[56] Frankel, Romer and Cyrus (1995). Our results indicate that the observed effect of trade on growth and the observed effect of growth on trade each survive the attempt to take into account their simultaneous existence. Thus, for example, simultaneity bias due to the endogeneity of income does not appear to have affected our estimates of the gravity model.

pursuing regional economic arrangements..." Another CGE study by Lewis and Robinson (1995, p.23) reaches similar conclusions: "Creation of an ASEAN FTA based on free trade among ASEAN economies alone offers only very modest gains."[57]

5.1 Regional integration has direct potential economic gains for ASEAN

The logic is that the countries are too similar to reap very large gains from trade among themselves. The notion that only policies that promote trade with industrialized countries are worth pursuing is out of date, however. First, such FTAs as Mercosur are now doing well. Second, the modern theories of trade say that differences in income levels are more likely to have a negative effect on trade than a positive effect (especially for manufactures, which are the basis of rapid growth in East Asian countries, even if they started from a low base). While trade in Asia has in the past fit the factor endowments story better than elsewhere in the world, the rising traffic in intermediate products within the region, what Krugman (1995) calls the "slicing up" of the value-added chain, suggests the large potential for intra-industry trade.

Third, if trade is thought to require large disparities in levels of income or factor endowments, it should be noted that the ratio of per capita incomes between Singapore and Indonesia (approximately 23) is larger than between the United States and Mexico (7) or Germany and Greece (3). Singapore is only one small country, of course. But even Malaysia has a per capita income that is 4 times that of Indonesia, and roughly ten times that of

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[57] Panagariya (1994, 825-826), like the other, more formal, studies, argues that ASEAN countries would be better off liberalizing unilaterally or multilaterally than via an AFTA. Kwan (1994, p.134) and Plummer (1994, p.13) argue that the members of ASEAN are too similar to form a successful FTA, but that expansion to include Indochina, or to include the NIEs and Japan, might give the group the necessary economic complementarity.

Indochina.[58]

Making these comparisons reminds one of a different, opposing, conventional wisdom about FTAs, that in the past they have not worked well between countries of very different income levels. This last judgment is a statement about politics rather than economics. The choice between multilateral and regional liberalization ultimately requires a political context (as does the choice vis-a-vis unilateral liberalization). It is unquestionably true that trade relations with countries outside their region are more important to the determination of growth and economic welfare of the ASEAN countries than are intra-ASEAN trade relations. The problem is that ASEAN countries have little control over the policies of the United States, Japan, or other major external trading partners. As always, the argument for regional liberalization is a case of the theory of the second best, which takes some distortions as given exogenously.

5.2 Regional vs. unilateral liberalization

The ASEAN countries do, of course, have control over their own trade policies vis-a-vis other countries. That is, they could pursue unilateral liberalization. They would benefit from removing their own barriers, according to economic theory, according to studies of trade-growth links, and according to recent simulations of ASEAN policy options. In most cases, the gain would be much greater than the gain from regional integration.

The political process, however, does not offer simple mutually-exclusive choices between

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[58] The figures are for 1992, from the World Bank Atlas, and use current exchange rates to compare countries' incomes. The differences are compressed if PPP rates are used. For example the ratio of Singapore's income level to Vietnam's drops from 71 to 13 (for 1994, from Merrill Lynch, *Global Economics and Currencies*, Nov. 15, 1995).

unilateral, regional, and multilateral liberalization. Sometimes leaders must make a choice on regional integration, with unilateral and multilateral policies taken as given.

We suspect that the economic scope for regional integration in Southeast Asia, the potential gains from trade and economies of scale to be reaped, are greater than others have allowed. The region will increasingly produce finished products, rather than only inputs. In such industries as automobiles, there is the potential for specialization in different parts of the production process by different countries, resulting in a finished product that is internationally competitive. With ten members (after the Indochinese countries are admitted), an ASEAN FTA would be the largest in the world in terms of population: 450 million people. Already, the 1990s have demonstrated that Asian economic growth is to an extent self-sustaining, no longer hostage to the performance of the U.S., Japanese or European economies.

5.3 Can regional integration help build political momentum for more general liberalization?

This is not the place for a full consideration of the political economy aspects of regional integration. There are myriad respects in which regional liberalization can either undermine liberalization more generally, or can help build support for it, depending on the circumstances.[59] But we will make note of several arguments that run in the optimistic direction.

First is what at the time of the 1994 APEC leaders' summit in Bogor, Indonesia, was called "competitive liberalization:" regional leaders seek to outdo each other in demonstrating

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[59] Chapter 10 of F (1996) is an extended survey of the topic.

their forward-looking vision.[60] More concretely, competition for investment encourages each to keep up with the others' pace of liberalization. Second, regional solidarity can sometimes be invoked to remove barriers that would otherwise be politically sacrosanct. Third, regional agreements can sometimes be used to lock in unilateral liberalization. Fourth, regional liberalization can build export constituencies and thus create domestic political momentum for further liberalization. Fifth, it has been argued that for smaller countries to group themselves into larger units, helps vis-a-vis global negotiations.

This was in part the logic behind the proposal by Malaysian Prime Minister Mohamed Mahatir to form an East Asian Economic Caucus. There are fears among Asian developing countries that an Asia bloc would be dominated by Japan, and other fears that an APEC bloc would be dominated by the United States. Here such sub-groupings as ASEAN might play a role. Currently the individual members of these clubs have very little bargaining power vis-a-vis the world's two biggest economies. But a more unified and integrated ASEAN, perhaps even with a common external tariff and speaking with a common voice,. would command more attention. The idea, for Southeast Asian countries, would be to use AFTA as leverage in order to be taken more seriously in APEC and in global negotiations. In the words of an IMF study, "ASEAN may be more important as a forum for collectively voicing the concerns of this group of small and relatively open economies on global economic issues, particularly on world trade."[61]

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[60] Bergsten (1994).

[61] Robinson, Byeon, and Teja (1991, p.38).

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Table 1: Intra-regional Trade Shares
and Intensity Ratios

Year	1980	1990	1992	1994
ANDEAN				
Ratio 1	0.04	0.05	0.07	0.10
Ratio 2	1.44	3.17	5.41	5.56
Australia + New Zealand				
Ratio 1	0.07	0.08	0.08	0.10
Ratio 2	2.10	2.42	2.94	3.33
ASEAN (incl. Brunei)				
Ratio 1	0.14	0.18	0.19	0.21
Ratio 2	1.89	1.92	1.83	1.61
ASEAN + Indochina				
Ratio 1		0.18	0.20	0.22
Ratio 2		1.96	1.89	1.67
EC				
Ratio 1	0.51	0.55	0.56	0.53
Ratio 2	0.72	0.71	0.78	0.86
EFTA				
Ratio 1	0.14	0.14	0.12	0.13
Ratio 2	0.98	0.90	0.99	1.06
MERCOSUR				
Ratio 1	0.11	0.11	0.16	0.19
Ratio 2	2.91	4.34	6.02	6.13
NAFTA				
Ratio 1	0.37	0.40	0.41	0.44
Ratio 2	0.95	1.00	1.04	1.04

Notes:
x_{ij} = export from i to j
z = sum of x_{ij} if both i and j are in the bloc
zx = sum of x_{ij} if i is in the bloc
zm = sum of x_{ij} if j is in the bloc
w = sum of x_{ij} for all i,j in the sample (63 + Brunei + Indochina countries)

$$Ratio\ 1 = \frac{2z}{(zx+zm)} \qquad Ratio\ 2 = \frac{(Ratio1)}{(zx+zm)/w}$$

Table 2: The Gravity Model of Trade, with Explicit Regional Trading Arrangements

Dependent Var: $trade_{ij}$

Year	1965		1970		1975	
Intercept	-7.910**	-9.632**	-9.157**	-10.763**	-9.326**	-10.820**
	(0.532)	(0.619)	(0.591)	(0.664)	(0.544)	(0.619)
GNP	0.637**	0.685**	0.646**	0.702**	0.744**	0.786**
	(0.018)	(0.019)	(0.019)	(0.021)	(0.018)	(0.019)
per-capita GNP	0.235**	0.284**	0.337**	0.403**	0.255**	0.294**
	(0.026)	(0.028)	(0.026)	(0.028)	(0.023)	(0.025)
Distance	-0.483**	-0.447**	-0.562**	-0.594**	-0.698**	-0.683**
	(0.044)	(0.052)	(0.042)	(0.049)	(0.042)	(0.048)
Adjacency	0.433**	0.482**	0.458**	0.394*	0.398*	0.400*
	(0.161)	(0.162)	(0.165)	(0.170)	(0.160)	(0.166)
Language	0.550**	0.586**	0.348**	0.410**	0.368**	0.446**
	(0.095)	(0.096)	(0.094)	(0.096)	(0.094)	(0.099)
EU15 BLOC	0.218#	0.143	0.061	-0.078	-0.140	-0.229*
	(0.116)	(0.114)	(0.110)	(0.107)	(0.104)	(0.104)
NAFTA BLOC	0.020	0.178	-0.227	-0.050	-0.313	-0.028
	(0.311)	(0.263)	(0.333)	(0.275)	(0.298)	(0.269)
MERCOSUR BLOC	-0.343	-0.051	0.311	0.451	0.277	0.427
	(0.444)	(0.444)	(0.331)	(0.358)	(0.326)	(0.351)
ANDEAN BLOC	-1.310**	-1.198**	-0.307	-0.283	0.311	0.351
	(0.446)	(0.467)	(0.253)	(0.275)	(0.321)	(0.342)
ASEAN BLOC	1.621**	1.274**	2.045**	1.570**	1.824**	1.512**
	(0.487)	(0.503)	(0.379)	(0.393)	(0.315)	(0.324)
EU15 OPENNESS		-0.120		-0.159*		-0.096
		(0.074)		(0.072)		(0.074)
NAFTA OPENNESS		-0.600**		-0.664**		-0.630**
		(0.114)		(0.112)		(0.126)
MERCOSUR OPENNESS		-0.289**		-0.091		-0.136
		(0.096)		(0.093)		(0.097)
ANDEAN OPENNESS		-0.147		0.030		-0.032
		(0.110)		(0.092)		(0.101)
ASEAN OPENNESS		0.451**		0.620**		0.392**
		(0.112)		(0.110)		(0.103)
# of Obs.	1194	1194	1274	1274	1453	1453
Adjusted R^2	0.660	0.674	0.684	0.701	0.703	0.713
Std. err. of Reg.	1.096	1.072	1.126	1.094	1.200	1.180

Notes: 1. **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.
2. All variables except dummy variables are in logs.

Dependent Var: $trade_{ij}$

Year	1980		1985	
Intercept	-12.006**	-13.564**	-10.956**	-12.146**
	(0.530)	(0.635)	(0.492)	(0.576)
GNP	0.775**	0.804**	0.797**	0.834**
	(0.016)	(0.017)	(0.016)	(0.017)
per-capita GNP	0.283**	0.323**	0.247**	0.264**
	(0.022)	(0.025)	(0.022)	(0.024)
Distance	-0.588**	-0.555**	-0.715**	-0.707**
	(0.039)	(0.048)	(0.039)	(0 047)
Adjacency	0.571**	0.602**	0.658**	0.626**
	(0.174)	(0.182)	(0 165)	(0.171)
Language	0.675**	0.754**	0 474**	0.571**
	(0.093)	(0.098)	(0 093)	(0 097)
EU15 BLOC	-0.021	-0.076	0.227*	0.134
	(0.103)	(0 103)	(0.099)	(0 100)
NAFTA BLOC	0.098	0.379	-0 264	0.185
	(0.274)	(0.290)	(0.268)	(0.289)
MERCOSUR BLOC	0.561*	0.746**	0.808*	0.686#
	(0.236)	(0.253)	(0.356)	(0.379)
ANDEAN BLOC	0.082	0 103	-0.103	0,046
	(0.248)	(0.263)	(0.466)	(0 479)
ASEAN BLOC	2.272**	1.925**	1.704**	1.487**
	(0.393)	(0.403)	(0.370)	(0.378)
AUS-NZ BLOC	1.263**	1.448**	1.399**	1.380**
	(0 106)	(0.159)	(0 106)	(0.158)
EU15 OPENNESS		-0.036		0.077
		(0.070)		(0.067)
NAFTA OPENNESS		-0.491**		-0.616**
		(0.115)		(0.112)
MERCOSUR OPENNESS		-0.132		0.252**
		(0 092)		(0.098)
ANDEAN OPENNESS		0.058		-0.087
		(0.101)		(0.101)
ASEAN OPENNESS		0.469**		0.312**
		(0.106)		(0.105)
AUS-NZ OPENNESS		-0.331*		-0.072
		(0.145)		(0.132)
# of Obs.	1708	1708	1647	1647
Adjusted R^2	0.694	0.703	0.721	0.730
Std. err. of Reg.	1.242	1.223	1.204	1.185

Notes: 1. **, *, # denotes significant at the 99%, 95%, and 90% levels respectively
2. All variables except dummy variables are in logs.

(Table 2: Fixed Effects)

Dependent Var: $trade_{ij}$

Year	1990		1992	
Intercept	-9.599**	-10.523**	-12.146**	-13.521**
	(0.464)	(0.509)	(0.469)	(0.530)
GNP	0.796**	0.832**	0.930**	0.963**
	(0.016)	(0.016)	(0.018)	(0.018)
per-capita GNP	0.080**	0.128**	0.128**	0.153**
	(0.017)	(0.018)	(0.019)	(0.020)
Distance	-0.572**	-0.656**	-0.770**	-0.733**
	(0.037)	(0.043)	(0.038)	(0.044)
Adjacency	0.751**	0.609**	0.445**	0.506**
	(0.189)	(0.189)	(0.157)	(0.170)
Language	0.572**	0.635**	0.768**	0.823**
	(0.090)	(0.088)	(0.090)	(0.090)
EUIS BLOC	0.267**	0.158	-0.083	-0.135
	(0.102)	(0.103)	(0.097)	(0.099)
NAFTA BLOC	0.152	0.367	-0.226	0.201
	(0.292)	(0.339)	(0.294)	(0.333)
MERCOSUR BLOC	1.918**	1.324**	0.690*	0.934*
	(0.235)	(0.264)	(0.340)	(0.364)
ANDEAN BLOC	-0.104	0.204	0.965**	1.187**
	(0.467)	(0.481)	(0.238)	(0.256)
ASEAN BLOC	1.757**	1.196**	1.766**	1.126**
	(0.335)	(0.316)	(0.281)	(0.286)
AUS NZ BLOC	1.732**	1.768**	1.716**	1.688**
	(0.097)	(0.151)	(0.095)	(0.140)
EUIS OPENNESS		-0.186**		-0.132*
		(0.063)		(0.064)
NAFTA OPENNESS		-0.434**		-0.751**
		(0.094)		(0.096)
MERCOSUR OPENNESS		0.818**		-0.295**
		(0.101)		(0.098)
ANDEAN OPENNESS		-0.106		-0.190#
		(0.103)		(0.108)
ASEAN OPENNESS		0.640**		0.610**
		(0.085)		(0.094)
AUS NZ OPENNESS		-0.272*		-0.154
		(0.136)		(0.128)
# of Obs.	1573	1573	1546	1546
Adjusted R^2	0.750	0.776	0.798	0.816
Std. err. of Reg.	1.115	1.057	1.135	1.085

Notes: 1. **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.
2. All variables except dummy variables are in logs.

Table 3

The Gravity Model, with Brunei, Indochina and Myanmar in the Data Set

Dependent Variable: log (export ij)

	1980	1990	1992	1994
Intercept	7.920**	8.236**	7.800**	4.664**
	(0.493)	(0.549)	(0.523)	(0.352)
log (GDPi)	0.642**	0.512**	0.528**	0.692**
	(0.029)	(0.031)	(0.032)	(0.028)
log (GDPj)	0.643**	0.551**	0.497**	0.615**
	(0.031)	(0.029)	(0.027)	(0.023)
log (Distance ij)	-1.073**	-1.045**	-0.949**	-0.724**
	(0.052)	(0.057)	(0.052)	(0.038)
Adjacency	-0.507*	0.354	0.765**	0.791**
	(0.204)	(0.216)	(0.211)	(0.197)
Language	-0.126	-0.239*	0.149	0.615**
	(0.128)	(0.129)	(0.110)	(0.089)
ASEAN Bloc	1.017**	0.986**	0.430	0.777*
	(0.287)	(0.253)	(0.324)	(0.316)
EC Bloc	0.252*	0.704**	0.537**	0.468**
	(0.112)	(0.121)	(0.121)	(0.109)
EFTA Bloc	0.222	0.056	-0.306#	-0.293
	(0.176)	(0.148)	(0.175)	(0.193)
ANZCER Bloc	1.969**	2.582**	2.210**	1.809**
	(0.163)	(0.134)	(0.118)	(0.095)
NAFTA Bloc	4.290**	1.811**	1.481**	1.193**
	(0.717)	(0.368)	(0.242)	(0.293)
ANDEAN Bloc	-0.328	-0.673*	-0.718**	1.760*
	(0.308)	(0.302)	(0.269)	(0.717)
MERCOSUR Bloc	0.302	2.012*	1.429	-0.231
	(0.278)	(0.807)	(0.838)	(0.312)
#obs	2854.000	2957.000	2985.000	2557.000
adjusted R2	0.430	0.391	0.400	0.592
std. error of reg.	2.150	2.422	2.199	1.547

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

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The Gravity Model, with Brunei, Indochina and Myanmar in the Data Set

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	(0.029)	(0.031)	(0.032)	(0.028)
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	(0.031)	(0.029)	(0.027)	(0.023)
log (Distance ij)	-1.073**	-1.045**	-0.949**	-0.724**
	(0.052)	(0.057)	(0.052)	(0.038)
Adjacency	-0.507*	0.354	0.765**	0.791**
	(0.204)	(0.216)	(0.211)	(0.197)
Language	-0.126	-0.239*	0.149	0.615**
	(0.128)	(0.129)	(0.110)	(0.089)
ASEAN Bloc	1.017**	0.986**	0.430	0.777*
	(0.287)	(0.253)	(0.324)	(0.316)
EC Bloc	0.252*	0.704**	0.537**	0.468**
	(0.112)	(0.121)	(0.121)	(0.109)
EFTA Bloc	0.222	0.056	-0.306#	-0.293
	(0.176)	(0.148)	(0.175)	(0.193)
ANZCER Bloc	1.969**	2.582**	2.210**	1.809**
	(0.163)	(0.134)	(0.118)	(0.095)
NAFTA Bloc	4.290**	1.811**	1.481**	1.193**
	(0.717)	(0.368)	(0.242)	(0.293)
ANDEAN Bloc	-0.328	-0.673*	-0.718**	1.760*
	(0.308)	(0.302)	(0.269)	(0.717)
MERCOSUR Bloc	0.302	2.012*	1.429	-0.231
	(0.278)	(0.807)	(0.838)	(0.312)
#obs	2854.000	2957.000	2985.000	2557.000
adjusted R2	0.430	0.391	0.400	0.592
std. error of reg.	2.150	2.422	2.199	1.547

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 4. (continued)

NAFTA_X OPENNESS	2.053** (0.169)	1.455** (0.194)	0.630** (0.187)	-0.057 (0.135)
NAFTA_M OPENNESS	1.962** (0.186)	1.167** (0.205)	0.640** (0.201)	0.391** (0.148)
ANDEAN_X OPENNESS	-0.469** (0.175)	-0.464* (0.189)	-1.089** (0.187)	0.734** (0.198)
ANDEAN_M OPENNESS	-0.192 (0.174)	-1.129** (0.192)	-0.725** (0.171)	0.545** (0.161)
MERCOSUR_X OPENNESS	0.007 (0.160)	1.452** (0.255)	1.020** (0.243)	-0.145 (0.120)
MERCOSUR_M OPENNESS	-0.340 (0.182)	0.677** (0.253)	0.336 (0.220)	-0.443** (0.122)
SGP_X OPENNESS	1.806** (0.220)	1.752** (0.255)	1.765** (0.220)	1.518** (0.178)
SGP_M OPENNESS	1.953** (0.295)	1.597** (0.287)	1.432** (0.271)	0.935** (0.254)
#obs	2854.000	2957.000	2985.000	2557.000
adj.R2	0.504	0.457	0.448	0.618
std.err.reg	2.006	2.289	2.110	1.497

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 5
The Gravity Model with Indochina Variables

Dependent Variable: log (export ij)

	1990	1992	1994
Intercept	8.867**	8.907**	5.522**
	(0.596)	(0.573)	(0.417)
log (GDPi)	0.473**	0.531**	0.706**
	(0.034)	(0.034)	(0.027)
log (GDPj)	0.489**	0.468**	0.601**
	(0.031)	(0.029)	(0.021)
log (Distance ij)	-1.133**	-1.069**	-0.814**
	(0.064)	(0.059)	(0.044)
Adjacency	0.758**	0.986**	0.897**
	(0.201)	(0.204)	(0.190)
Language	-0.487**	-0.167	0.344**
	(0.129)	(0.112)	(0.092)
ASEAN Bloc	-0.084	-1.073*	-0.371
	(0.400)	(0.483)	(0.483)
EC Bloc	-0.711**	-0.475**	-0.020
	(0.158)	(0.157)	(0.130)
EFTA Bloc	0.460*	0.675**	0.261
	(0.207)	(0.222)	(0.209)
ANZCER Bloc	1.700**	1.667**	1.783**
	(0.353)	(0.311)	(0.241)
NAFTA Bloc	-0.185	0.261	0.772*
	(0.405)	(0.319)	(0.326)
ANDEAN Bloc	1.498**	1.325**	0.848
	(0.373)	(0.372)	(0.757)
MERCOSUR Bloc	0.028	0.033	0.445
	(0.793)	(0.842)	(0.337)
ASIND Bloc	0.178	0.694	0.462
	(0.387)	(0.426)	(0.425)
INDCHA_X OPENNESS	-2.404**	-2.762**	-1.992**
	(0.199)	(0.208)	(0.239)
INDCHA_M OPENNESS	-2.045**	-2.578**	-2.060**
	(0.234)	(0.228)	(0.214)
ASEAN_X OPENNESS	0.354#	0.163	0.085
	(0.182)	(0.153)	(0.117)
ASEAN_M OPENNESS	0.306#	-0.033	0.066
	(0.182)	(0.165)	(0.128)
EC_X OPENNESS	0.988**	0.435**	0.106
	(0.121)	(0.103)	(0.084)
EC_M OPENNESS	0.916**	0.432**	0.148
	(0.119)	(0.116)	(0.090)
EFTA_X OPENNESS	0.373**	-0.310*	-0.140
	(0.138)	(0.131)	(0.089)

Table 5. (continued)

EFTA_M OPENNESS	-0.402** (0.147)	-0.833** (0.138)	-0.632** (0.097)
ANZCER_X OPENNESS	1.235** (0.205)	0.640** (0.180)	0.131 (0.154)
ANZCER_M OPENNESS	0.424 (0.264)	0.157 (0.231)	0.001 (0.166)
NAFTA_X OPENNESS	1.412** (0.191)	0.565** (0.183)	-0.098 (0.132)
NAFTA_M OPENNESS	1.135** (0.203)	0.606** (0.199)	0.371* (0.146)
ANDEAN_X OPENNESS	-0.559** (0.189)	-1.176** (0.187)	0.542** (0.195)
ANDEAN_M OPENNESS	-1.236** (0.193)	-0.834** (0.170)	0.370* (0.157)
MERCOSUR_X OPENNESS	1.357** (0.255)	0.930** (0.244)	-0.292* (0.120)
MERCOSUR_M OPENNESS	0.563* (0.253)	0.204 (0.218)	-0.577** (0.121)
SGP_X OPENNESS	1.770** (0.254)	1.781** (0.220)	1.565** (0.180)
SGP_M OPENNESS	1.615** (0.285)	1.453** (0.269)	0.975** (0.251)
#obs	2957.000	2985.000	2557.000
adj.R2	0.467	0.463	0.639
std.err.reg	2.267	2.079	1.456

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 6: The Gravity Model Including ASEAN-ANZ Trade Links

Dependent Variable: log (export ij)

	1980	1990	1992	1994
Intercept	7.936**	8.581**	8.622**	5.008**
	(0.567)	(0.607)	(0.585)	(0.431)
log (GDPi)	0.610**	0.471**	0.523**	0.728**
	(0.028)	(0.034)	(0.035)	(0.027)
log (GDPj)	0.604**	0.491**	0.476**	0.620**
	(0.029)	(0.031)	(0.030)	(0.022)
log (Distance ij)	-1.099**	-1.115**	-1.053**	-0.801**
	(0.061)	(0.065)	(0.060)	(0.046)
Adjacency	-0.106	0.587**	0.824**	0.766**
	(0.202)	(0.206)	(0.209)	(0.192)
Language	-0.418**	-0.410**	-0.085	0.456**
	(0.124)	(0.128)	(0.112)	(0.092)
ASEAN Bloc	-0.616#	-0.956**	-1.253**	-0.494
	(0.328)	(0.323)	(0.357)	(0.321)
EC Bloc	-0.838**	-0.652**	-0.416**	0.042
	(0.141)	(0.159)	(0.157)	(0.131)
EFTA Bloc	0.610**	0.505*	0.704**	0.304
	(0.206)	(0.210)	(0.225)	(0.213)
ANZCER Bloc	0.049	0.694*	0.829**	1.164**
	(0.285)	(0.280)	(0.266)	(0.222)
NAFTA Bloc	0.593	-0.009	0.416	0.898**
	(0.674)	(0.425)	(0.336)	(0.336)
ANDEAN Bloc	0.844*	1.483**	1.330**	0.803
	(0.353)	(0.378)	(0.367)	(0.775)
MERCOSUR Bloc	0.905**	0.120	0.106	0.487
	(0.344)	(0.808)	(0.858)	(0.344)
ASANZ Bloc	1.612**	1.276**	1.052**	0.748**
	(0.267)	(0.278)	(0.259)	(0.216)
ASEAN_X	-0.038	0.331#	0.164	0.153
OPENNESS	(0.171)	(0.185)	(0.156)	(0.120)
ASEAN_M	-0.251	0.293	-0.020	0.117
OPENNESS	(0.177)	(0.184)	(0.170)	(0.134)
EC_X	0.658**	1.048**	0.510**	0.182*
OPENNESS	(0.111)	(0.122)	(0.106)	(0.088)
EC_M	0.871**	0.982**	0.494**	0.216*
OPENNESS	(0.106)	(0.120)	(0.118)	(0.093)
EFTA_X	0.179	0.434**	-0.219#	-0.027
OPENNESS	(0.125)	(0.138)	(0.132)	(0.092)
EFTA_M	-0.217#	-0.314*	-0.749**	-0.535**
OPENNESS	(0.126)	(0.147)	(0.138)	(0.099)
ANZCER_X	0.987**	1.122**	0.566**	0.106
OPENNESS	(0.195)	(0.216)	(0.188)	(0.167)
ANZCER_M	0.090	0.335	0.094	-0.007
OPENNESS	(0.256)	(0.280)	(0.246)	(0.177)

Table 6 (continued)

NAFTA_X OPENNESS	2.040** (0.169)	1.446** (0.194)	0.623** (0.187)	-0.060 (0.135)
NAFTA_M OPENNESS	1.950** (0.186)	1.158** (0.206)	0.632** (0.201)	0.387** (0.148)
ANDEAN_X OPENNESS	-0.489** (0.174)	-0.478** (0.189)	-1.098** (0.187)	0.727** (0.198)
ANDEAN_M OPENNESS	-0.209 (0.173)	-1.142** (0.192)	-0.734** (0.171)	0.539** (0.161)
MERCOSUR_X OPENNESS	-0.015 (0.159)	1.435** (0.255)	1.006** (0.243)	-0.155 (0.120)
MERCOSUR_M OPENNESS	-0.362* (0.182)	0.659** (0.253)	0.324 (0.220)	-0.451** (0.122)
SGP_X OPENNESS	1.808** (0.211)	1.757** (0.253)	1.775** (0.219)	1.519** (0.178)
SGP_M OPENNESS	1.955** (0.295)	1.598** (0.287)	1.442** (0.270)	0.942** (0.253)
#obs	2854.000	2957.000	2985.000	2557.000
adj.R2	0.506	0.457	0.448	0.618
std.err.reg	2.002	2.287	2.109	1.496

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 7: List of Countries in the Sample for FDI

Country	Host	Source		
	1990-93	1990	1992	1993
Canada	x	x	x	x
France	x	x	x	x
Germany	x	x	x	x
Italy	x	x	x	x
Japan	x	x	x	x
UK	x	x	x	x
US	x	x	x	x
Austria	x	x	x	x
Belgium	x			
Denmark	x			
Finland	x	x	x	x
Netherlands	x	x	x	x
Norway	x	x	x	x
Sweden	x	x	x	x
Switzerland	x	x	x	x
Australia	x	x	x	x
Greece	x			
Iceland	x			
Ireland	x			
New Zealand	x			
Portugal	x			
Spain	x			
South Africa	x			
Turkey	x			
Yugoslavia				
Israel	x			
Argentina	x			
Brazil	x			
Chile	x			
Colombia				
Ecuador	x			
Mexico	x			
Peru	x			
Venezuela	x			

Country	Host	Source		
	1990-93	1990	1992	1993
Bolivia	x			
Paraguay	x			
Uruguay	x			
Algeria	x			
Libya	x			
Nigeria	x			
Egypt	x			
Morocco	x			
Tunisia	x			
Sudan	x			
Ghana	x			
Kenya	x			
Ethiopia	x			
Iran	x			
Kuwait	x			
Saudi Arabia	x			
Indonesia	x			
Taiwan	x	x	x	o
Hong Kong	x	o	o	o
India	x			
South Korea	x	x	o	o
Malaysia	x		o	o
Pakistan				
Philippines	x			
Singapore	x	o	o	o
Thailand	x	x	o	o
Hungary	x			
Poland	x			
China	x	o		o
Brunei				
Cambodia				
Laos	x			
Myanmar	x			
Vietnam	x			

Notes:

1. All countries are in the trade regressions
2. Among the source countries, those denoted by an "o" only have data on FDI going into Laos, Myanmar, or Vietnam.

Table 8: Bilateral FDI as Another Determinant of Trade

Dependent Variable: log (export ij)

	1990	1992	1994
Intercept	5.19**	6.20**	3.01**
	(0.72)	(0.72)	(0.46)
log (FDI stock ij)	0.09**	0.07**	0.19**
(previous year's)	(0.02)	(0.02)	(0.02)
log (GDPi)	0.55**	0.55**	0.74**
	(0.06)	(0.07)	(0.04)
log (GDPj)	0.41**	0.39**	0.60**
	(0.06)	(0.06)	(0.04)
log (Distance ij)	-0.49**	-0.59**	-0.61**
	(0.07)	(0.07)	(0.05)
Adjacency	0.55**	0.22	0.22
	(0.17)	(0.19)	(0.16)
Language	0.08	0.42**	0.28#
	(0.16)	(0.14)	(0.16)
THAI→ASEAN	0.62		
	(0.59)		
EC_2	0.08	0.06	-0.11
	(0.13)	(0.14)	(0.12)
EFTA_2	-0.44#	-0.46#	0.00
	(0.23)	(0.28)	(0.23)
ANZCER_2	0.60**	0.53**	1.14**
	(0.19)	(0.20)	(0.17)
NAFTA_2	0.09	0.70#	0.24
	(0.47)	(0.38)	(0.29)
# of Obs.	307.00	390.00	367.00
adjusted R2	0.64	0.55	0.80
std. error of reg.	1.03	1.20	0.87

Notes:

1, **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

2. In the 1994 regression, the stock of FDI in 1992 (the latest available) is used. (As opposed to 1993.)

Table 9: Bilateral FDI and Openness as Determinants of Trade

Dependent Variable: log (export ij)

	1990	1992	1994
Intercept	5.60**	6.93**	2.68**
	(1.06)	(0.86)	(0.70)
log (FDI stock ij) (previous year's)	0.10**	0.09**	0.24**
	(0.03)	(0.03)	(0.02)
log (GDPi)	0.64**	0.62**	0.83**
	(0.09)	(0.08)	(0.06)
log (GDPj)	0.46**	0.43**	0.64**
	(0.08)	(0.06)	(0.04)
log (Distance ij)	-0.64**	-0.74**	-0.62**
	(0.09)	(0.08)	(0.07)
Adjacency	0.47**	0.21	0.17
	(0.17)	(0.19)	(0.15)
Language	0.00	0.30#	0.20
	(0.16)	(0.16)	(0.15)
ASEAN_2	-0.84		
	(0.71)		
EC_2	0.10	-0.04	-0.04
	(0.23)	(0.23)	(0.15)
EFTA_2	0.09	0.44	0.36
	(0.24)	(0.31)	(0.26)
ANZCER_2	0.26	0.16	0.59*
	(0.30)	(0.36)	(0.24)
NAFTA_2	-0.05	0.36	1.10**
	(0.52)	(0.44)	(0.32)
ASEAN_X	0.70		
	(0.63)		
ASEAN_M	0.54*	0.31#	0.16
	(0.24)	(0.18)	(0.18)
EC_X	-0.34	-0.49**	-0.46**
	(0.21)	(0.18)	(0.12)
EC_M	-0.03	0.02	-0.42**
	(0.17)	(0.18)	(0.13)
EFTA_X	-0.31	-0.75**	-0.29#
	(0.26)	(0.28)	(0.16)
EFTA_M	-0.31	-0.49**	-0.54**
	(0.21)	(0.17)	(0.16)
ANZCER_X	-0.02	-0.10	0.04
	(0.27)	(0.34)	(0.22)
ANZCER_M	0.37#	0.28	-0.08
	(0.21)	(0.19)	(0.15)
NAFTA_X	-0.56*	-0.71**	-1.16**
	(0.25)	(0.26)	(0.19)
NAFTA_M	0.39	0.52*	-0.59**
	(0.26)	(0.25)	(0.16)

Table 9 (continued)

ANDEAN_M	-0.79* (0.34)	-0.01 (0.30)	0.59** (0.22)
MERC_M	0.89 (0.76)	1.27* (0.58)	-0.72** (0.21)
SGP_M	0.93** (0.25)	0.97** (0.23)	0.85** (0.24)
# of Obs.	307.00	390.00	367.00
adjusted R2	0.68	0.61	0.85
std. error of reg.	0.97	1.12	0.75

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 10: FDI and Openness as Determinants of Trade, with Indochina-ASEAN Links

Dependent Variable: log (export ij)

	1990	1992	1994
Intercept	6.37** (0.94)	8.67** (0.67)	5.19** (0.71)
log (FDI stock ij) (previous year's)	0.10** (0.02)	0.11** (0.02)	0.20** (0.02)
log (GDPi)	0.65** (0.08)	0.48** (0.06)	0.76** (0.05)
log (GDPj)	0.33** (0.07)	0.29** (0.04)	0.52** (0.04)
log (Distance ij)	-0.61** (0.08)	-0.67** (0.07)	-0.72** (0.06)
Adjacency	0.73** (0.17)	0.74** (0.17)	0.43** (0.16)
Language	-0.15 (0.16)	-0.12 (0.14)	0.00 (0.14)
ASEAN_2	-1.67** (0.57)		
EC_2	0.09 (0.21)	0.09 (0.20)	-0.08 (0.15)
EFTA_2	-0.03 (0.24)	0.23 (0.28)	0.37 (0.23)
ANZCER_2	0.18 (0.28)	-0.20 (0.26)	0.27 (0.24)
NAFTA_2	-0.28 (0.55)	0.02 (0.41)	0.64* (0.32)
INDCHA_M	-4.19** (0.58)	-4.02** (0.37)	-1.92** (0.38)
ASEAN_X	1.44** (0.52)		
ASEAN_M	0.13 (0.20)	-0.29* (0.15)	-0.15 (0.17)
EC_X	-0.43* (0.17)	-0.85** (0.14)	-0.63** (0.11)
EC_M	-0.25 (0.17)	-0.46** (0.15)	-0.74** (0.11)
EFTA_X	-0.35 (0.23)	-1.21** (0.24)	-0.65** (0.17)
EFTA_M	-0.62** (0.19)	-0.94** (0.15)	-1.02** (0.13)
ANZCER_X	0.02 (0.22)	0.07 (0.22)	0.10 (0.23)
ANZCER_M	0.08 (0.19)	-0.19 (0.17)	-0.24# (0.14)
NAFTA_X	-0.57** (0.19)	-0.74** (0.19)	-1.05** (0.16)

Table 10 (continued)

NAFTA_M	0.37 (0.25)	0.30 (0.21)	-0.53** (0.14)
ANDEAN_M	-1.26** (0.28)	-0.87** (0.19)	-0.19 (0.18)
MERC_M	0.04 (0.62)	0.21 (0.44)	-0.85** (0.19)
SGP_M	0.89** (0.24)	0.93** (0.23)	0.88** (0.24)
# of Obs.	307.00	390.00	367.00
adjusted R2	0.75	0.76	0.87
std. error of reg.	0.85	0.87	0.69

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 11: FDI and Openness as Determinants of Trade, with ASEAN-ANZ Links

Dependent Variable: log (export ij)

	1990	1992	1994
Intercept	5.59**	6.85**	2.67**
	(1.08)	(0.89)	(0.70)
log (FDI stock ij) (previous year's)	0.10**	0.09**	0.24**
	(0.03)	(0.03)	(0.02)
log (GDPi)	0.64**	0.63**	0.83**
	(0.09)	(0.08)	(0.06)
log (GDPj)	0.46**	0.43**	0.64**
	(0.08)	(0.06)	(0.04)
log (Distance ij)	-0.63**	-0.73**	-0.62**
	(0.10)	(0.08)	(0.07)
Adjacency	0.47**	0.21	0.17
	(0.17)	(0.19)	(0.15)
Language	0.00	0.31#	0.19
	(0.16)	(0.16)	(0.15)
ASEAN_2	-0.90		
	(0.73)		
EC_2	0.10	-0.04	-0.04
	(0.23)	(0.23)	(0.15)
EFTA_2	0.09	0.44	0.36
	(0.24)	(0.31)	(0.26)
ANZCER_2	0.23	-0.01	0.44*
	(0.29)	(0.32)	(0.21)
NAFTA_2	-0.05	0.36	1.10**
	(0.52)	(0.44)	(0.32)
ASANZ_2	0.07	0.25	0.17
	(0.30)	(0.29)	(0.27)
ASEAN_X	0.70		
	(0.63)		
ASEAN_M	0.54*	0.29	0.16
	(0.24)	(0.18)	(0.18)
EC_X	-0.34	-0.49**	-0.46**
	(0.21)	(0.18)	(0.12)
EC_M	-0.03	0.02	-0.42**
	(0.17)	(0.18)	(0.13)
EFTA_X	-0.31	-0.74*	-0.29#
	(0.26)	(0.28)	(0.16)
EFTA_M	-0.31	-0.49**	-0.54**
	(0.21)	(0.17)	(0.16)
ANZCER_X	-0.05	-0.15	0.02
	(0.33)	(0.36)	(0.24)
ANZCER_M	0.37#	0.25	-0.09
	(0.21)	(0.19)	(0.15)
NAFTA_X	-0.56*	-0.71**	-1.16**
	(0.25)	(0.26)	(0.19)

Table 11 (continued)

NAFTA_M	0.39 (0.26)	0.52 (0.25)	-0.59** (0.16)
ANDEAN_M	-0.79* (0.34)	0.00 (0.30)	0.59** (0.22)
MERC_M	0.89 (0.76)	1.26* (0.58)	-0.72** (0.21)
SGP_M	0.93** (0.25)	0.95** (0.24)	0.84** (0.25)
# of Obs.	307.00	390.00	367.00
adjusted R2	0.68	0.61	0.85
std. error of reg.	0.97	1.12	0.75

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 12: The Determination of Bilateral FDI

Dependent Variable: log (FDI stock ij)

	1990	1992	1994
Intercept	0.34 (1.67)	4.16** (1.51)	4.29** (1.03)
log (GDPi)	1.40** (0.14)	0.77** (0.14)	0.37** (0.10)
log (GDPj)	0.40** (0.09)	0.45** (0.10)	0.85** (0.06)
log (Distance ij)	-0.86** (0.19)	-0.81** (0.18)	-0.70** (0.12)
Adjacency	0.10 (0.46)	-0.10 (0.52)	-0.55 (0.49)
Language	1.79** (0.48)	2.24** (0.42)	2.40** (0.32)
ASEAN_2	-2.63** (0.93)		
EC_2	1.37** (0.37)	1.27** (0.40)	0.97* (0.38)
EFTA_2	1.75** (0.66)	2.52** (0.51)	0.12 (0.50)
ANZCER_2	3.43** (0.57)	2.21** (0.50)	1.63** (0.34)
NAFTA_2	1.18** (0.43)	1.39** (0.52)	1.27 (0.79)
# of Obs.	366.00	301.00	373.00
adjusted R2	0.36	0.32	0.45
std. error of reg.	2.98	2.55	2.02

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 13: The Determination of FDI, with Openness

Dependent Variable: log (FDI stock ij)

	1990	1992	1994
Intercept	1.73 (1.86)	7.95** (1.52)	9.95** (1.31)
log (GDPi)	1.61** (0.14)	0.85** (0.12)	0.28* (0.12)
log (GDPj)	0.38** (0.08)	0.43** (0.07)	0.77** (0.06)
log (Distance ij)	-1.54** (0.19)	-1.56** (0.18)	-1.40** (0.15)
Adjacency	-0.74# (0.43)	-0.50 (0.47)	-0.72 (0.45)
Language	1.67** (0.46)	1.81** (0.43)	1.58** (0.35)
ASEAN_2	-2.60** (0.96)		
EC_2	-0.22 (0.48)	-0.08 (0.47)	0.14 (0.43)
EFTA_2	0.57 (0.72)	1.28# (0.70)	0.78 (0.56)
ANZCER_2	-1.04 (0.95)	-0.33 (0.97)	-1.03 (0.78)
NAFTA_2	-2.45** (0.75)	-2.89** (0.76)	-1.77* (0.89)
ASEAN_X	1.43# (0.83)		
ASEAN_M	1.27** (0.48)	1.03* (0.41)	1.05** (0.37)
EC_X	3.10** (0.38)	1.72** (0.34)	1.16** (0.31)
EC_M	0.61 (0.40)	0.58 (0.36)	-0.03 (0.32)
EFTA_X	4.32** (0.54)	3.01** (0.44)	0.47 (0.39)
EFTA_M	-0.37 (0.46)	-0.74 (0.46)	-0.90* (0.39)
ANZCER_X	4.98** (0.67)	2.59** (0.66)	1.85** (0.60)
ANZCER_M	2.33** (0.66)	1.99** (0.75)	2.23** (0.50)
NAFTA_X	3.61** (0.41)	3.31** (0.39)	2.89** (0.37)
NAFTA_M	2.95** (0.54)	2.84** (0.56)	1.48** (0.40)
ANDEAN_M	-0.43 (0.40)	-1.16** (0.35)	-1.01** (0.34)

Table 13 (continued)

MERC_M	3.77** (0.83)	4.82** (0.89)	2.10** (0.44)
SGP_M	0.88 (0.86)	0.92 (0.92)	1.37** (0.52)
# of Obs.	366.00	301.00	373.00
adjusted R2	0.61	0.57	0.57
std. error of reg.	2.33	2.03	1.79

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

ASEAN in a Regional Perspective

A Research Project
Undertaken for the Southeast Asia and Pacific Department
International Monetary Fund

Prof. Jeffrey Frankel Prof. Shang-Jin Wei

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APPENDICES THAT FOLLOW

Appendix 1: the gravity model of trade with remoteness

Appendix 2: the gravity model of trade in first differences

Appendix 3: remoteness in the equation using FDI to determine trade

Appendix 4: remoteness in the equation determining FDI

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Table 14: The Determination of FDI, with Openness, including Indochina

Dependent Variable: log (FDI stock ij)

	1990	1992	1994
Intercept	0.91 (1.88)	8.70** (1.57)	12.97** (1.35)
log (GDPi)	1.65** (0.14)	0.77** (0.13)	0.15 (0.12)
log (GDPj)	0.44** (0.08)	0.39** (0.07)	0.58** (0.08)
log (Distance ij)	-1.54** (0.19)	-1.54** (0.18)	-1.45** (0.15)
Adjacency	-0.90* (0.42)	-0.34 (0.47)	-0.29 (0.40)
Language	1.81** (0.46)	1.67** (0.42)	1.22** (0.33)
ASEAN_2	-2.27* (0.90)		
EC_2	-0.22 (0.48)	-0.02 (0.47)	0.10 (0.43)
EFTA_2	0.63 (0.71)	1.20 (0.74)	0.73 (0.57)
ANZCER_2	-0.90 (0.96)	-0.34 (0.97)	-1.41# (0.79)
NAFTA_2	-2.29** (0.74)	-2.98** (0.75)	-2.34** (0.82)
INDCHA_M	1.21# (0.62)	-0.84# (0.50)	-2.53** (0.56)
ASEAN_X	1.31# (0.75)		
ASEAN_M	1.51** (0.50)	0.83# (0.44)	0.57 (0.38)
EC_X	3.18** (0.39)	1.61** (0.35)	0.84** (0.30)
EC_M	0.78# (0.41)	0.41 (0.37)	-0.48 (0.31)
EFTA_X	4.46** (0.54)	2.83** (0.46)	-0.08 (0.36)
EFTA_M	-0.19 (0.47)	-0.90# (0.47)	-1.51** (0.40)
ANZCER_X	4.91** (0.69)	2.52** (0.66)	1.80** (0.60)
ANZCER_M	2.46** (0.67)	1.85* (0.77)	1.90** (0.52)
NAFTA_X	3.57** (0.41)	3.31** (0.38)	2.89** (0.37)
NAFTA_M	2.99** (0.54)	2.76** (0.57)	1.48** (0.41)

Table 14 (continued)

ANDEAN_M	-0.09 (0.44)	-1.48** (0.39)	-2.05** (0.39)
MERC_M	4.15** (0.88)	4.51** (0.89)	1.80** (0.45)
SGP_M	0.87 (0.85)	0.94 (0.93)	1.34* (0.52)
# of Obs.	366.00	301.00	373.00
adjusted R2	0.61	0.57	0.59
std. error of reg.	2.32	2.02	1.74

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.

Table 15: Determination of FDI, with Openness and ASEAN-ANZ Links

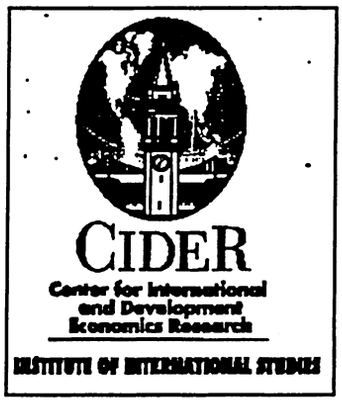
Dependent Variable: log (FDI stock ij)

	1990	1992	1994
Intercept	1.84 (1.87)	8.17** (1.52)	10.06** (1.31)
log (GDPi)	1.61** (0.14)	0.85** (0.12)	0.28* (0.12)
log (GDPj)	0.38** (0.08)	0.42** (0.07)	0.77** (0.06)
log (Distance ij)	-1.56** (0.19)	-1.59** (0.18)	-1.42** (0.16)
Adjacency	-0.76# (0.43)	-0.55 (0.47)	-0.74 (0.45)
Language	1.69** (0.46)	1.84** (0.42)	1.59** (0.35)
ASEAN_2	-1.29 (1.11)		
EC_2	-0.22 (0.47)	-0.08 (0.47)	0.14 (0.43)
EFTA_2	0.56 (0.72)	1.26# (0.70)	0.77 (0.56)
ANZCER_2	0.05 (0.85)	1.35 (0.87)	0.70 (0.64)
NAFTA_2	-2.45** (0.75)	-2.89** (0.76)	-1.78* (0.89)
ASANZ_2	-1.42# (0.85)	-2.24** (0.82)	-1.96** (0.71)
ASEAN_X	1.46# (0.83)		
ASEAN_M	1.37** (0.49)	1.25** (0.43)	1.06** (0.37)
EC_X	3.11** (0.38)	1.72** (0.34)	1.16** (0.31)
EC_M	0.61 (0.40)	0.57 (0.36)	-0.05 (0.32)
EFTA_X	4.33** (0.53)	3.03** (0.43)	0.48 (0.39)
EFTA_M	-0.37 (0.46)	-0.73 (0.45)	-0.90* (0.39)
ANZCER_X	5.28** (0.77)	3.08** (0.75)	2.03** (0.61)
ANZCER_M	2.37** (0.67)	2.05** (0.75)	2.25** (0.50)
NAFTA_X	3.62** (0.41)	3.33** (0.38)	2.90** (0.37)
NAFTA_M	2.96** (0.54)	2.84** (0.56)	1.48** (0.41)

Table 15 (continued)

ANDEAN_M	-0.42 (0.40)	-1.14** (0.35)	-1.01** (0.34)
MERC_M	3.80** (0.83)	4.87** (0.88)	2.12** (0.44)
SGP_M	0.91 (0.86)	0.73 (0.93)	1.54** (0.52)
# of Obs.	366.00	301.00	373.00
adjusted R2	0.61	0.57	0.57
std. error of reg.	2.33	2.02	1.79

Notes: **, *, # denotes significant at the 99%, 95%, and 90% levels respectively.



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