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The ASEAN Free-Trade Area: Backwards or Forwards[1]

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In January 1992, the heads-of-state of the members of the Association of Southeast Asian Nations (ASEAN) met for the fourth time since the organisation was established with the "Bangkok Declaration" in 1967 **(Exhibit 1).** Breaking with past summits at which political and diplomatic concerns were the focus of discussion, the Fourth Summit was dedicated to economic issues. In particular, the leaders had on their table a proposal endorsed by their economic ministers that outlined the creation of an ASEAN Free-Trade Area (AFTA) within 15 years, with accelerated liberalisation of 15 manufacturing sectors.

The AFTA proposal had been the fruits of myriad meetings of academics, policymakers, and private-sector representatives, brought together over the past year to develop an economic integration strategy for ASEAN that would navigate it through what would appear to be the increasingly hostile waters of international competition. As regional economic integration in ASEAN had reached only elementary levels on the eve of the Summit, AFTA marked a radical departure from past efforts; the Association had prided itself on a slow, deliberate process of economic integration based on consensus. Moreover, some economists argued that a discriminatory free-trade area within ASEAN would be detrimental to the economic development prospects of its member states, as it would lead to trade diversion and "bureaucratic bottlenecks" that would force government technocrats to divert their attention from the on-going Uruguay Round of GATT. In addition, economic diversity in ASEAN could lead to "industrial polarisation" with manufacturing industries moving from less-developed regions - e.g., in Indonesia - to more developed ones - e.g., Singapore (see Exhibits 2 and 3 for selected data on ASEAN and other Asian economies). One particularly dark scenario would have AFTA create economic frictions that could lead to the unravelling of ASEAN itself, which had been a pillar of diplomatic strength in Southeast Asia during extremely precarious times. Clearly, the costs and benefits of economic integration would have to be carefully considered from a political economy perspective.

1. Economic Development and Policy Reform in ASEAN

In general, the Association of Southeast Asian Nations (ASEAN) was founded in response to the threat of communist expansion in the Mekong area. Hence, it comes as no surprise that accords on greater economic cooperation were spurred by political considerations. Advocates of greater regional economic integration stress the dynamic gains that could be achieved through expanded economic cooperation, and they have criticised the relatively slow pace of ASEAN economic initiatives in the 1970s and 1980s without sufficiently appreciating the political motivations and constraints. Pessimists argue that greater economic integration was either politically unrealistic or undesirable due to the discriminatory nature implied by an "ASEAN trade bloc". In any event, as the regional political situation began to stabilise in Southeast Asia with the withdrawal of Vietnamese troops from Cambodia and economic reform in that country in 1988, the policy agenda increasingly focused on economic issues. In many ways, ASEAN found itself at a watershed in the late 1980s.

Although they occupy the same geographical area, the ASEAN countries are extremely diverse in terms of economic structure and development, political orientation, factor endowments, culture, history, and religion. In such a setting, economic cooperation can never be easy. Attempts at economic integration were first attempted in the mid-1970s at the first two ASEAN summits; still, very little was

accomplished because of mutual suspicions that continued to exist between individual pairs of countries - e.g., Indonesia's mistrust of Singapore's intentions with respect to access to its huge market; Indonesia and Malaysia over geography; the Philippines and Malaysia over Sabah and Sarawak. Even the institutional structure of ASEAN was designed to avoid too much integration (see Exhibit 4 for a review of ASEAN institutions). The ASEAN Secretariat was comprised of officials who were seconded on a short-term basis from various national ministries, ensuring that they take a national - rather than a regional - perspective. It had no technical abilities; and its functions were minimal. Located in Indonesia, it was probably the emptiest building in Jakarta with only about 13 staff members at the official level; even the Secretary General held the title of "Secretary General of the ASEAN Secretariat" rather than "Secretary General of ASEAN", to minimise his/her importance.

Still, beginning with the late 1980s, the attitude began to change. Officials became more open to the idea of expanding economic cooperation within ASEAN. Although the meeting itself was short, the Third ASEAN Summit in Manila in December 1987 demonstrated a desire on the part of all member-nations to promote trade and investment links, focusing on economic liberalisation and private sector participation.

This reorientation of ASEAN economic cooperation is consistent with the national policies of most member countries, i.e., economic development through market-based growth and greater participation of the private sector. The adoption of more outward-oriented industrialisation strategies based on international trade and greater direct foreign investment (DFI) were being pursued in all ASEAN member-states by the late 1980s, including previously inward-looking countries like Indonesia. As noted by Professor Saleh Afiff, Indonesia's Minister of State for National Development Planning, in a January 1990 speech to the Asian Development Bank regarding the policy change in Indonesia:

> "Although our reform efforts in Indonesia cover the full spectrum of economic activity, making easy characterisation difficult, they nonetheless share a common focus. Through a series of steps, both big and small, we have tried to peel away the layers of unnecessary intervention and inefficiency that prevent us from making the best possible use of our resources and opportunities" (Afiff 1990: 2).

Such a sentiment marked a sea-change in the Indonesian position. Professor Afiff went on to suggest that, yes, the international marketplace was becoming more competitive and closed, so Indonesia had to become more competitive. A decade earlier and the reply would have been just the opposite: close the market to protect it from foreign competition.

The progress that was made at the December 1987 Summit in terms of the scope and effectiveness of ASEAN economic cooperation would have been impossible if all countries had not begun to accept the need for the same types of outward-oriented, international-trade-based, and investment-based policies. In recent years, the ASEAN countries have made even more dramatic strides toward liberalising their economies. This opened up a world of opportunity for greater intraregional cooperation, as consistent policy directions towards lowering barriers generally facilitate intraregional liberalisation. An important catalyst in this change was, of course, the collapse of primary commodity prices, particularly petroleum, which forced countries that were dependent on primary commodity exports to embrace a policy strategy that promoted manufactured exports.

The most dramatic structural change was evident in Indonesia, which was, along with Brunei and Malaysia, extremely dependent on the export of oil for foreign exchange earnings. Indonesia's policies helped to transform its export structure to emphasise manufactures so that by 1988, petroleum exports constituted less than one-half of export earnings (the dramatic decline was partly due to the relative price effect of a fall in oil prices). The government embraced more effective macroeconomic policies (e.g., rupiah devaluations) and microeconomic policies (e.g., exporter duty compensation under "P4BM", reform of the customs service, a simplified system of trade protection and removal of many biases against exports, and a simplified system of licensing and regulations (Hill, 1989) that were geared to simulate the growth of manufacturing production. The value of manufactured exports increased substantially from US$500 million in 1980 to about US$4 billion in 1987, coming to about one-fourth of total exports and a nominal annual growth rate of 34 percent. In this sense, there were important silver linings to the dark cloud of the petroleum price collapse **in** the 1980s, as it forced Indonesia to pursue macroeconomic and microeconomic policies that led to its industry becoming more efficient and competitive in the world market. It has also had significant potential benefits for ASEAN economic cooperation, as the sheer size and economic and diplomatic power of Indonesia make this country a dominant player. Without Indonesia, ASEAN cannot move forward.

1.1 Measuring Structural Change

While the structural change in the trade orientation of ASEAN countries is often cited, it would be useful to measure the extent of this change both over time and by direction, i.e., relative to other regional groupings. This is done in Exhibit 5**,** which correlates rankings of comparative advantage of various East Asian economies over time (column 1) and relative to three possible blocs (columns 2-4, discussed below). The proxy used to rank comparative advantage industries is the "revealed comparative advantage" approach[1], calculated according to the following formula:

$$RCA = (X_{ij}/X_j)/(X_{iw}/X_w)$$

where
X_{ij} = exports of commodity i by country j
X_j = total exports of country j
X_{iw} = world exports of commodity i, and
X_w = total world exports

In Exhibit 5, this formula was calculated for each 4-digit SITC (over 600 industries) for each of the ASEAN-4 countries, the three Asian NIEs, and for Japan. An RCA of 1 means that the share of i in the country's total exports equals the share of i in total world exports. With an RCA ratio greater than unity commodity **i** is more important in country j exports than it is in total world trade, implying that the country has a comparative advantage in the product. The converse holds for a ratio smaller than unity. The higher the index for a given commodity, the higher it is assumed to be in the ranking of goods by comparative advantage. The 600 4-digit SITC industries were therefore ranked by their RCAs from the highest on down.

[1] This index was developed by Balassa (1965). A number of the assumptions underlying this approach have been questioned, but the measures are used frequently as an informative index (See, for example, Kreinin 1966, Bowen 1983 and Yeats 1985). This index is preferable to export-import ratios since data on relative export performance are not distorted by differences in the degree of tariff protection as long as all exporters are subject to the same tariff. As Yeats (1985) points out, however, voluntary export restraints, MFN tariffs, and the MFA, all have discriminatory effects. But in the case of the ASEAN countries, these differences are negligible.

To measure the degree of structural change, a Spearman Rank Correlation Coefficient was computed for each country between the RCA rankings in 1981 and the latest year for which data are available (see Appendix 1). A separate calculation was made for the country's exports to the world as a whole, and to each of the three blocs noted in Exhibit 5, i.e., Bloc 1: ASEAN-4 (resource-rich ASEAN economies); Bloc 2: ASEAN-4 + NIEs (South Korea, Hong Kong, and Singapore, which we include with this group because of its vastly-different economic structure relative to the ASEAN-4); and Bloc 3: ASEAN-4 + NIEs + Japan. The estimates of the Spearman Rank Correlation Coefficients range from -1 to +1: perfect rank correlation would be unity in absolute value, while complete lack of each correlation is zero. For our purposes, *a high rank correlation means that over time the ranking of a* country's *industries by comparative advantage in the specified bloc has changed little. A low coefficient means that the ranking has changed considerably, suggesting rapid structural change.*

The results in Exhibit 5 suggest that, indeed, the ASEAN countries have experienced significant change in their respective export structures over the 1980s, with the greatest change coming in Indonesian manufactures (0.45). And with the exception of Indonesia, the structural change in the exports of individual ASEAN countries is greater than the change in overall trade, suggesting that intraregional trade is more dynamic than overall trade. However, the greatest amount of structural change has taken place with Bloc 2 countries; that is, trade with the NIEs has been changing rapidly.

In sum, economic reform in the ASEAN countries helped spur the rapid economic for which it has now become famous (Exhibit 3). Liberalisation of the external sector led to a booming export sector (Exhibit 2), which in turn played an important role in propelling growth. Yet, the greater internationalisation of the ASEAN economies that was inevitable when commercial policy was liberalised rendered them more sensitive to changes in international economic policies and trends. Concerns about rising protectionism in developed countries, the increase in bilateral trading blocs, and the outcome of the Uruguay Round of GATT, have important implications for the economic growth prospects of ASEAN.

2. ASEAN and the International Marketplace

As ASEAN constitutes a relatively small market, the region cannot possibly rely on intra-regional trade for sustainable economic growth based on the export-promotion industrialisation strategy that served the East Asian economies so well.[2] In 1988, 18 percent of total regional exports went to ASEAN markets; if Singapore were excluded, the share would fall to 4 percent. Interestingly, the corresponding shares for 1970 were 21 percent and 6 percent, respectively. Thus, while the total value of ASEAN exports increased rapidly from US$6 billion in 1970 to US$106 billion in 1988, the share going to markets within the region declined.

The United States became in the late 1980s the largest recipient of ASEAN exports, e.g., accounting for 21 percent of the total in 1988. Japan and the European Community (EC) accounted for 19 percent and 14 percent of total ASEAN exports, respectively. Moreover, the importance of the U.S. market to ASEAN was particularly striking in the case of manufactured exports, which are key to the outward-

[2] The following data are taken from Naya et al. (1990).

looking industrialisation strategies of the ASEAN countries. The U.S. market was the destination of 25-38 percent of ASEAN member-state manufactured exports, as opposed to 8-11 percent for Japan and 13-21 percent for the EC in 1988.[3]

It is therefore no wonder that ASEAN became fearful regarding a possible surge in protectionism and bilateralism in the developed world in the late 1980s. While ASEAN exports to the United States had been growing at a healthy pace, the increased use of nontariff barriers in sectoral manufactured product areas (e.g., quotas, voluntary export restraints, and orderly marketing arrangements) as well as agricultural subsidies, countervailing duties, and anti-dumping measures affected some (sensitive) categories of exports. In addition, certain other features of the American "get-tough" approach to commercial policy, such as the Omnibus Trade and Competitiveness Act of 1988 and the heightened pressure to protect intellectual property, served to increase uncertainty about the future.

Although it kept a lower profile, the EC also increased its use of nontariff barriers and other trade-distorting measures in the 1980s, and in many ways was more aggressive than the United States. For example, while the Treaty of Rome prohibited quantitative restrictions on intra-EC trade (except as safeguard measures), it did allow for national quantitative restrictions on extra-EC trade.[4] The EC Multi-Fibre Agreement is composed of national quotas for textiles and clothing. Other products where quotas were significant include vehicles,[5] footwear, electronic equipment, and toys, products which were - and continue to be - important to ASEAN. Even though the ASEAN countries depend less on the EC market, even a partial closing of such a large trading bloc would significantly affect ASEAN economic development and would restrict ASEAN options for its export-promotion strategies.

Any discussion of protectionism in the developed countries would be incomplete without including Japan. If all imports and exports are included, Japan is ASEAN's largest trading partner, ASEAN's largest direct investor, and the largest source of official development assistance to the ASEAN members. In sum, from an economic perspective, Japan is ASEAN's most important economic partner.

However, as ASEAN embraced a more outward-looking development strategy focusing on manufactured exports, it did not look to Japan as a particularly attractive market for its goods. In 1986, Japan ceased to be ASEAN's largest export market (losing out to the United States), and, as noted above, the share of manufactures in total exports to Japan, although it had increased in recent years, was much smaller than in the cases of the United States or the EC. Hence, while Japan's formal tariff and nontariff barriers affecting ASEAN exports were very few,[6] "structural impediments" that close the Japanese market to the imports of manufactures served to limit ASEAN manufactured exports; how-

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[3] Ibid..
[4] This will no longer be possible after the EC 1992 project is complete because national quotas require border restrictions to resist trade deflection, and the plan is to bar border restrictions after 1992.
[5] These quotas apply almost entirely to Japanese exports of motor vehicles. However, ASEAN's importance as an entity in the production of vehicle components and assembly has been increasing. For example, Malaysia **is** even exporting its Proton Saga car, which it produces under a joint venture with Mitsubishi, to the United Kingdom. Thus, in addition to direct effects, there will be indirect general equilibrium effects of reducing international prices due to the quotas on Japanese cars, and any reduction in supply will affect ASEAN as a component producer.
[6] The case of rice Imports is an important exception.

ever, ASEAN did stand to gain from external and internal pressures on Japan to open its market.[7] Moreover, although Japan is the largest investor in ASEAN, its DFI position in the region is smaller than in other developing areas outside its geographical proximity. For example, Japanese DFI in ASEAN was just sixty percent that in Latin America (*Japan Export-Import Bank 1988*).[8] Further, while Japan has been significantly increasing its official development assistance programme in the region, critics argue that the projects are not well organised because of small field staffing, frequently tied loans, and an insufficient grant element.

Another point regarding the external economic environment facing ASEAN concerns its relationship with the NIEs.[9] ASEAN has always been a major supplier of raw materials to these countries. Beginning in the mid-1980s, the NIEs began to liberalise manufactured imports, allowing ASEAN to diversify its exports to the region. Moreover, the NIEs began to invest heavily in ASEAN in the late 1980s, in large part prompted by structural adjustment imperatives in their respective domestic markets. Although ASEAN exports to South Korea, Taiwan, and Hong Kong accounted for a relatively small share of the total, they were significantly higher than two decades earlier, constituting 10 percent of the total in 1988, up from 6 percent in 1970. These changes are manifested in the calculations obtained in Exhibit *5.*

Without question, the movement toward trade blocs in the international economic milieu was of great concern to ASEAN. In January 1989, the U.S.-Canada Free Trade Area went into effect. However, the importance of this agreement was more significant to ASEAN in symbolic terms than in actual practice. First, about 75 percent of trade between Canada and the United States was already duty-free on the eve of the agreement; thus, the marginal effect of preferential trade liberalisation was thought to be minimal. In addition, many of the effectively-liberalised products were not competitive with ASEAN exports. To the extent that liberalised trade and investment led to greater dynamism and economic growth in North America, ASEAN would benefit.

Hence, the major concern to ASEAN was the concrete signal that the free-trade area sent - the United States was increasingly looking to bilateral, rather than multilateral, solutions to its trade problems. The pact with Canada was only one agreement; the United States had other pacts with developing countries, including a free trade area with Israel and special initiatives with the Caribbean Basin and Mexico. In addition, Mexico had recently expressed an interest in negotiating a free-trade agreement with the United States, and the United States and Chile signed an accord in September 1990. The United States was also studying other possible preferential trading pacts, particularly with Asian partners, that many believed to be an indication of the United States's readiness to "go bilateral" on a massive scale if the on-going multilateral trade negotiations were to fall at the end of the Uruguay Round in December 1990.

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[7] In this sense, ASEAN hoped to reap significant positive externalities from the U.S.-Japan Structural Impediments Initiative (Sll) talks that began in 1989. These discussion applied to improving port facilities and other infrastructure to ease the entry of imports and deregulation of the complicated goods-distribution system to make it easier for foreigners, including ASEAN countries, to sell in Japan.

[8] For a discussion of DFI in ASEAN, see Naya et al (1990).

Yet, North American bilateralism was not an imminent threat; the United States continued to be a leading protagonist of multilateralism, especially at the GATT. Moreover, the United States had recently signed a bilateral trade and investment agreement with the Philippines, consented to form one with Thailand, and was considering negotiating a bilateral agreement with ASEAN itself.[10] On the other hand, EC 1992 presented a much more immediate concern. Based on the 1985 Single European Act which amended the 1957 Treaty of Rome that established the European Economic Community, the EC 1992 blueprint envisioned free trade in goods, services, capital, and labour, as well as plans for fiscal and monetary harmonisation. In short, EC 1992 could make the EC an economic bloc *par excellence* by January 1, 1993. This programme, combined with the problematic external policy of the EC discussed above, could significantly affect ASEAN's economic development strategies in a number of ways, to the extent that it led to a "fortress Europe" (in which EC1992 was just a Trojan Horse for greater protectionism), trade and investment diversion (discussed below), or enhanced competitiveness of EC-member states (which would allow them to out-compete ASEAN exports through greater efficiency).

Thus, EC 1992 and the U.S.-Canada Free Trade Area, along with a plethora of proposals for bilateral arrangements in the Pacific which may or may not include ASEAN and an uncertain future for the GATT and multilateralism, made ASEAN understandably nervous with respect to its international trade prospects. It began to consider more seriously its own regionalism options. The U.S.-ASEAN Initiative (Naya, et. al, 1989) process began in 1988 and suggested that the United States and ASEAN consider a free-trade accord. This proved difficult, as ASEAN was not a cohesive unit and could not arrange a deal like, say, the EC is able to do with its associate partners. Instead, it would have to be a framework agreement under which the United States would negotiate bilaterally, which would be a much more complicated affair. Second, Asia-Pacific regional options began to emerge. ASEAN countries were founding members of the Asia-Pacific Economic Cooperation (APEC) group, the offspring of an Australian initiative leading to a first conference in November 1989. APEC seemed to present an interesting opportunity for ASEAN to discuss its needs and worries with its most important trading partners, and opened up new potential avenues of cooperation. Still, if APEC became a much more cohesive unit in which the possibility of a regional free-trade area were to be discussed, there would be the strong possibility that ASEAN would at first be diluted and ultimately superfluous, something that no ASEAN country found to be in its interest.

In sum, the ASEAN member-states felt considerable pressure to consider their own subregional economic initiatives, both to strengthen competitiveness and to ensure that ASEAN as an institution would survive. The possibility of an ASEAN free-trade area, dismissed as academic rubbish only a few years earlier, began to be discussed openly in 1990 after the ASEAN ministers called for "bold and innovative approaches" to economic cooperation. But would such a free trade area be consistent with ASEAN's needs? In order to answer this question, we need to consider the economic effects of regional economic integration.

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[9] The NIEs include South Korea, Taiwan, Hong Kong and Singapore. However, in the current discussion, we exclude Singapore from the NIEs category, as it is a member of ASEAN.

[10] Based on the findings of a joint study (Naya et al. (1989), such an agreement would most likely entail the negotiation of an umbrella agreement encompassing possible negotiations on a wide variety of issues. Importantly,

3. The Theory of Economic Integration

3.1 Static Effects of Preferential Trading Groups

It is a standard result of international trade theory that free trade in commodities maximises global efficiency in a distortion-free world. Through trade, countries are able to specialise in the production of commodities in which they have "comparative advantage", i.e., those goods that the country produces at a lower opportunity cost relative to the rest of the world.[11] They will export these products, and import those in which the country is relatively uncompetitive. Hence, trade will allow for a more efficient division of labour; the gains from trade will be greatest when there are no distortions affecting the international exchange of goods. Free-trade Is therefore the "first-best" policy from a global efficiency perspective.[12] Prior to the seminal work by Jacob Viner, *The Customs Union Issue* (Viner, 1950), it was believed that, if a preferential trade grouping (PTG) did not raise tariff and non-tariff barriers on non-member countries, it would imply a movement toward free-trade because it would involve a net reduction in (intra-regional) barriers. As the world would have fewer trade distortions, it would be able, to increase gains from trade through a PTG. At first impression, this approach would seem reasonable; however, this analysis was based on an "oral tradition" and was devoid of any explicit analytical framework.

Viner (1950) was the first to demonstrate in a formal model the shortcomings of this reasoning. He argued that if a PTG were to represent a step in the direction of free-trade, then by definition it must be the case that post-PTG commodity purchases should be supplied from lower cost sources than was the preunion case. Such an effect would occur in the instances where inefficient domestic (say, Mexican) production previously protected by tariffs contracts as a result of more efficient partner country (say, U.S.) production. In Viner's terminology, this is "trade creation" and represents a movement toward free trade. However, some protected commodities that were previously imported from a nonpartner country (say, Japan) - the lowest-cost producer - will now be imported from the United States, a higher-cost producer. This is "trade diversion" and represents a movement away from free trade since it diverts imports from the lowest cost source. Hence, we cannot determine *a priori* in which direction the PTG causes efficiency to go; it will represent a movement toward free trade only if trade creation exceeds trade diversion.[13]

Interestingly, this economic approach to the effects of a PTG conflicts directly with the popular approach. To an economist, trade creation is beneficial to a country because it leads to the contraction of inefficient resources that could be used more effectively elsewhere in the economy. On the other hand, trade diversion leads to greater inefficiency by spurring production in the partner country in areas in which it has *intraregional* comparative advantage but comparative disadvantage at the *global*

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the study emphasises the need to embrace "open regionalism," i.e., a pact that would be consistent with GATT and would not be discriminatory against third parties.

[11] Comparative advantage will be determined by the country's domestic relative prices compared to that of the rest of the world.

[12] In theory, free trade is not necessarily the best trade policy from the viewpoint of an individual country, providing that it has some monopoly power in international trade (the "optimal tariff" argument).

[13] By introducing the distinction between trade creation and trade diversion, Viner established the foundations upon which the General Theory of Second Best would be built, a widely-used concept in microeconomics.

level.[14] Yet, to many non-economists, contraction of domestic production (trade creation) is considered to be welfare-inhibiting, for it means a loss of jobs. Trade diversion is considered in a positive light, as it suggests a gain to the union at the expense of non-partners. These sentiments were expressed forcefully during the NAFTA debate in the United States, in which the emphasis was on job loss and on trying to keep the Japanese and the Europeans out of the North American market.

How can these views be reconciled? To the extent that they can be, it will have to relate to base assumptions. The Viner model and subsequent elaborations implicitly or explicitly assume *(inter alia):* (1) markets are competitive; (2) there is full employment of economic resources at all times; (3) tariff revenues are redistributed to consumers; and (4) there are no externalities in production or consumption. If we lift these assumptions, we could get radically different results. For example, if there exist unemployed labour, then the contraction of domestic industry through the trade creation effect will only lead to more unemployment and, hence, it would be welfare reducing. Likewise, trade diversion could be beneficial by putting resources back to work.

3.2 Dynamic effects of Preferential Trading Groups

There have been a number of critiques and extensions on the Viner paradigm,[15] but the essential intuition behind trade creation and trade diversion resulting from changes in relative prices remains intact. However, these static economic effects of PTGs generally refer to onetime changes in the allocation of resources (allocative efficiency). On the other hand, the "dynamic effects" of PTGs are long-term effects that are likely to be far more important than the static effects. We consider briefly four possible areas that we define (liberally) to be "dynamic" in nature: economies of scale, X-efficiency improvements, changes in investment flows, and the potential for industrial expansion in a developing country context.

Economies of Scale. The advantages derived from access to an expanded market have always been an attraction for countries to form PTGs. A main benefit is the possibility of reaping economies of scale in production. The argument is straightforward: In industries where production technology is characterised by decreasing costs, the domestic market alone may be too small to permit production at an optimal level. If there are high tariff walls on these goods in foreign countries, international trade might be of little or no help in allowing these firms to expand output toward the optimum. With the formation of a PTG and the subsequent intra-union free trade, the expanded market could present the domestic decreasing cost firms with adequate demand to produce at the optimum, a point which is particularly relevant in the context of developing countries where local economies are small.[16] Economies of scale are thus a possible argument in favour of the economic rationale of PTGs.[17]

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[14] Of course, it is possible for the partner country to have intra-regional and global comparative advantage in a certain product. But if this is the case, the home country would have been importing the product from the country before the union as well, meaning that there would be no trade diversion.

[15] See, for example: Meade (1955); Gehrels (1956-57); Lipsey, (1960); Michaely (1965) Cooper and Massell (1965); Wonnacott and Wonnacott (1981); Kemp and Wan (1976).

[16] For a more detailed discussion of the microeconomic foundations of the economies-of-scale argument, see Scherer (1980), Ch.4.

[17] See Cordon (1972), for a theoretical exposition of the effects of regional economic integration on economies of scale.

X-Efficiency. The term X-efficiency relates to the optimal organization of the productive process, e.g., work methods, incentive programmes, plant layout, management, and psychological environment at the workplace. These can be separated into three categories: (1) intraplant motivational efficiency, (2) external motivational efficiency, and (3) non-market input efficiency. Leibenstein (1966) shows empirically that the counterpart to X-efficiency, X-inefficiency, is a far more significant cause of failure to achieve the social optimum in production than is allocative inefficiency (e.g., due to monopolistic practices)..

It is therefore important for our purposes to include the X-efficiency factor **in** searching for the economic viability of PTGs. If inefficient practices in the workplace of a protected industry are replaced by efficient methods due to competition from the partner country, a PTG will improve productivity. This is called "forced efficiency"[18] and represents an improvement in welfare. In addition, there may be other benefits, such as increased technology and method sharing, new ideas to stimulate the psychological atmosphere at the workplace, and increased standardisation of quality and specification requirements allowing for longer production runs. In the context of a PTG formed of economic partners at diverse levels of economic development, the less-developed members would stand to gain more from benefits inherent in X-efficiency spillovers.

Investment Effects. A PTG will have several effects on the direction of investment flows. First, after a PTG is formed, domestic capital previously invested in partner countries in order to evade tariffs will now flow to where the return on capital is highest in the PTG. This results in a more efficient allocation of investment funds. In addition, the formation of a PTG reduces the risk and uncertainty of investing in foreign countries. Investments in partner countries are no longer subject to the risk that changes in foreign commercial policy may bring, and the PTG itself may have investment provisions.

However, there also will be an efficiency cost associated with investment changes induced by PTG formation. Investment funds that would be more efficiently invested in nonpartner countries may be diverted to partner countries in the PTG. This investment diversion is caused by the "noneconomic" attraction of investment funds to the free-trade area in order to evade its discriminatory tariff wall.[19] For example, suppose Kia Motors wishes to build an automobile assembly plant off-shore for export to the U.S. market. Further, assume that it deems Indonesia to be the most efficient location. With the creation of NAFTA, Kia could decide to build the plant in Mexico instead.[20] Thus, while this investment-diversion effect reduces global efficiency, it constitutes an increased investment flow to North America.[21]

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[18] This term is from Lipsey (1981).
[19] Kreinin (1964).
[20] Of course, in making this decision, Kia would have to take into account the extremely high domestic content requirements of NAFTA, which in automobiles comes to 62.5 percent of value added. Hence, NAFTA creates an additional incentive for Kia to move its operations to Mexico in lieu of Indonesia, thereby increasing the investment diversion effect.
[21] In considering investment diversion at the firm level, we must point out the underlying assumptions that: (1) there exists financing constraints; and (2) the investing company only requires one plant. Otherwise, there would be no investment diversion, only investment creation. In the example above, Kia motors would build plants both in Mexico *and* Indonesia.

PTGs and Economic Development. In addition to the dynamic factors mentioned above, PTGs can also be used as part of an economic development strategy. In developing countries, the nurturing of the industrial base is perceived to be of paramount importance for a number of reasons, e.g., self-sufficiency aspirations, work-force and social externalities, and political clout of industrialists. In other words, industrial production "appears as a collective consumption good yielding a flow of satisfaction to the electorate independent of the satisfaction they derive directly from the consumption of industrial products" (Johnson, 1965: 258). Therefore, if the country wishes to protect and expand its domestic industrial production and forming a PTG is the least expensive way of achieving such a goal (because a large market is needed to attain lower-cost production), it follows that PTGs are indeed economically rational. If one chooses to consider industrial production as a public good, it is necessary to re-evaluate our notions of the economic value of trade creation and trade diversion. Trade creation in this context is welfare-inhibiting in that it involves the contraction of industrial production. Trade diversion is welfare-increasing if it involves diversion in favour of domestic industrial production. A developing country will not join a PTG in this context if it believes its industrial production will contract in favour of non-industrial production in which it has comparative advantage.

With the formation of a customs union, the developing country in question experiences a growth in market size for its industrial products. If it specialises in the industry in which it has intra-union comparative advantage and the other country does likewise, then the same level of industrial production can be sustained at a lower marginal cost. Or, alternatively, for the same cost of production, the level of industrial production can be greater.

3.3 New Theories

Many of the new approaches that have emerged in the international trade literature centre around locational advantages and the "natural" development of intraregional trade before an agreement is reached. Empirically, PTGs in the global economy are all geographically based. Also, it would appear that, *ceteris paribus***,** the closer are countries to each other, the larger the percentage of trade that takes place between them. Hence, twothirds of EU trade is intraregional; Canada and the United States are each other's most important trading partners; and Mexico is heavily reliant on trade with the United States. As will be noted in the next section, the larger the volume of trade between countries within a regional bloc, the greater the potential for trade creation and the less for trade diversion, making the agreement more likely to be efficiency-enhancing rather than efficiency reducing. The exception would be between geographically-close developing countries whose trade tends to be inter-industry rather than intra-industry.

Thus, according to Krugman (1991) and others, "natural" economic integration takes place between geographically-close countries due to lower transportation costs; forming a PTG between such countries would be consistent with the market and, therefore, would be more efficient. As a rule of thumb, one could say that a PTG in which intraregional trade is greater than or equal to 50 percent of trade would be efficient.

Moreover, Frankel (1992) stresses that it is not enough merely to consider values of intraregional trade in this context. His "natural" economic bloc would be one in which the "bias" for trade in the region has been growing over time. Using the possible formation of a market-determined "natural" economic bloc in Asia, he suggests that the growth in intra-regional trade in Asia that has characterised the 1980s reflects mainly an economic growth effect rather than a "natural" increase in trade between countries of the region. Estimating a gravity model of the region's trade, he shows that the bias in favour of intra-East Asian trade, though positive, has actually been falling over the 1980s if one corrects for the growth bias.

However, these approaches to the "natural" determinants of a trade blocs have several shortcomings. First, almost no economic bloc has met the 50 percent criteria. While intra-regional trade in the EU exceeds that mark *today,* this is only after 36 years of a widereaching PTG. At the formation of the EC, the percentage of intra-regional trade was closer to one-third. Also, intra-regional flows in NAFTA are about 33 percent today and about 21 percent in ASEAN. Does this mean that all these blocs should be considered *a priori* "unnatural"? Moreover, such an approach says nothing about the degree of distortion involved in the other 50 percent of trade. If discrimination against the extra-regional 50 percent is high, is the group still to be considered "natural"? If a PTA has only one-third intra-regional trade but its extra-regional trade is such that there will be little diverted trade, is this necessarily an "un-natural" bloc?

These arguments are addressed in Kreinin and Plummer (1994), whose results are given in Exhibit 6 (with Blocs I and 2 corresponding to Blocs 3 and 4, respectively, in Exhibit 5) . They suggest an alternative definition to "natural" economic blocs to be those in which the *pattern* of intra-regional trade is consistent with the member-states actual comparative advantage (as proxied by non-discriminatory trade under GATT). Hence, if the pattern of intra-regional trade is consistent with the member-states's overall trading patterns, the trade blocs would be efficient. A high correlation (again, using the Spearman Rank Correlation Coefficient technique) between intra-regional trade in an Asian trade bloc (as proxied by intra-regional rankings of comparative advantage, discussed above) and the existing commodity-ranked comparative advantage structure of its member states with the world as a whole, would imply that the pattern of trade would be largely preserved, suggesting relatively little trade diversion but allowing for significant trade creation and positive dynamic effects of a PTG. These results would suggest that both versions of East Asian blocs would probably be "natural," with the broadest definition of an East Asian Bloc (i.e., including Japan) coming very close to the pattern of world trade. On the other hand, correlations for intra ASEAN-4 trade (not shown), vary from 0.45 to 0.57.

4. An ASEAN Free-Trade Area?

The above analysis presents an intricate framework within which to consider *a priori* the desirability of an ASEAN Free-Trade Area (AFTA). Earlier, it was also noted that there were a number of "exogenous" factors (for example, a hostile external economic environment) and political considerations in coming to a decision. Of course, ASEAN is not alone in facing non-economic determinants of its external trade policy; every PTG in existence can arguably be traced to important political factors.

The agreements that were made at the first two ASEAN summits in the mid-1970s were the first steps into the unknown; never before had such a divergent group of countries tried to form a trading bloc, and it would be precarious to rush the process unnecessarily when many doubts and questions remain. There had been hitherto no time for the ASEAN member-states to develop an "ASEAN identity," a process which is especially difficult for the members who had until only recently been fighting for independence and were still forging their national identities. In addition, jumping headlong into extensive economic integration schemes holds great perils, to which the failures of the Central American Common Market, the Latin American Free Trade Area, the Central African Common Market, and many others attest. The structural changes that result from economic integration have important social costs, including (1) the possibility of "polarisation" of production towards the most industrialised member country; and (2) short-run adjustment costs to displaced capital and labour as inefficient sectors contract due to the new regional division of labour. These considerations are of particular concern to developing countries where, even if the adjustments are in the long-run interest of the economy, the short-run costs may lead to serious political problems.

Three types of industrial cooperation agreements have been established in ASEAN. The first was the ASEAN Industrial Projects (AIP) agreement, originally signed in 1980, which was essentially a large-scale, government-owned project in which each ASEAN member-state would be host to at least one large-scale industrial project geared to serve the ASEAN market. An important goal was to put into practice the "resource and market pooling" function that the founding architects of ASEAN had in mind. The host government would possess 60 percent of the project's total equity with the remaining 40 percent shared by the other states. However, the AIP was disappointing, as ASEAN had by the late 1980s only been able to reach agreements on two urea projects, one in Indonesia and the other in Malaysia.

A second industrial project, the ASEAN Industrial Complementation (AIC), was created in 1981 and involved liberalisation of intra-ASEAN trade in intermediate products at various phases in the production of a final product which was to be assembled in ASEAN. AIC projects require the participation of at least four ASEAN countries in the production process, and, unlike the AIP program, AIC projects can be proposed by both the governments of the ASEAN countries and the private sector, which was represented by the ASEAN Chamber of Commerce and Industry. However, the AIC package was not embraced by any entity until the concept of "brand-to-brand" complementation (vertical integration of production by country) was accepted.[22] This strategy appears to be well-suited to automobile assembly; two AIC projects are currently in operation, both involving joint ventures with Japanese automobile manufactures (Mitsubishi and Toyota).

Although the AIC project was more private sector-oriented than the AIP, the ASEAN governments recognised the necessity of stimulating greater and more complete involvement of the private sector in ASEAN industrial cooperation; this realisation led to the agreement on ASEAN Industrial Joint Ventures (AIJV) in late 1983. The AIJV programme was designed to be more flexible and decentralised than the other programmes: only two ASEAN countries needed to participate (and approval became

[22] This concept deals with the production of intermediate inputs for the assembly of one "brand" of product.

less complicated), joint ventures with foreign capital were encouraged, and AIJVs could be of any scale.

Hence, the evolution toward greater economic cooperation in ASEAN in the late 1980s was more progressive and more private-sector-oriented than in the past, even though it remained at a very elementary state. An important milestone in this trend was the December 1987 Summit in Manila, where the ASEAN government heads-of-state demonstrated their dedication to expanding ASEAN economic cooperation. The Preferential Trade Arrangement (PTA), which gave preferential treatment to qualifying commodities (but the list was small), was increased in substance by deepening the margin of preferences (MOP) on traded commodities from 25 percent to 50 percent on over three-fourths of the eligible traded goods. In addition, the coverage was enhanced to 50 percent of the value or 90 percent of all traded items for each member country, and the exclusion lists were restricted to 10 percent of items traded. The period over which the new agenda is to be implemented is five years (seven years for Indonesia and the Philippines); this is the first time that a timetable has been established for an economic cooperation program.

In addition, ASEAN endeavoured to enhance regional industrial cooperation by emphasising the importance of the private sector and significantly upgrading the AIJV program by liberalising restrictions on foreign participation (which was increased to 60 percent ownership)[23] and by improving the approval process through a "preapproval" system. Moreover, the MOP for items traded under the AIJV program increased to 90 percent of the existing external tariff, which is a significantly deeper cut than the original 50 percent MOP.[24]

Nevertheless, while the Third Summit did represent a large increase in intra-regional cooperation, the change took place from a very small base. Certainly, AFTA would be a far more radical departure from previous efforts at economic integration. It could possibly blow up in their faces; if AFTA were agreed to and then subsequently dropped, it could be a first step in unravelling of ASEAN, the demise of which could be quickened by the rise of APEC. Moreover, if AFTA were agreed to but then led to greater trade diversion and inefficiency, this could threaten the development strategies of the ASEAN countries. On the other hand, AFTA could be used as an instrument to strengthen regional development, create a strong, influential voice in bilateral, regional and multinational fora, and help propel ASEAN as a regional force in the Pacific Century. But was it worth the risks?

[23] Sixty percent foreign participation was at first only applicable to projects approved before December 31, 1990, at which time the maximum foreign ownership revert back to the 49 percent agreed upon in 1983, but the deadline was recently (July 1990) extended to December 31, 1993.
[24] The Supplementary Agreement to Amend the Basic Agreement on ASEAN Industrial Joint Ventures, Singapore, June 16, 1987 had increased the original MOP cut to 75 percent.

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Exhibit 1
Bangkok Declaration

The Asean Declaration

(Bangkok Declaration)

Bangkok, 8 August 1967

The Presidium Minister for Political Affairs/Minister for Foreign Affairs of Indonesia, the Deputy Prime Minister of Malaysia, the Secretary of Foreign Affairs of the Philippines, the Minister for Foreign Affairs of Singapore and the Minister of Foreign Affairs of Thailand:

MINDFUL of the existence of mutual interests and common problems among countries of South-East Asia and convinced of the need to strengthen further the existing bonds of regional solidarity and cooperation;

DESIRING to establish a firm foundation for common action to promote regional cooperation in South-East Asia in the spirit of equality and partnership and thereby contribute towards peace, progress and prosperity in the region;

CONSCIOUS that in an increasingly interdependent world, the cherished ideals of peace, freedom, social justice and economic well-being are best attained by fostering good understanding, good neighbourliness and meaningful cooperation among the countries of the region already bound together by ties of history and culture;

CONSIDERING that the countries of South-East Asia share a primary responsibility for strengthening the economic and social stability of the region and ensuring their peaceful and progressive national development, and that they are determined to ensure their stability and security from external interference in any form or manifestation in order to preserve their national identities in accordance with the ideals and aspirations of their peoples;

AFFIRMING that all foreign bases are temporary and remain only with the expressed concurrence of the countries concerned and are not intended to be used directly or indirectly to subvert the national independence and freedom of States in the area or prejudice the orderly processes of their national development;

DO HEREBY DECLARE:

FIRST, the establishment of an Association for Regional Cooperation among the countries of South-East Asia to be known as the Association of South-East Asian Nations (ASEAN).

SECOND, that the aims and purposes of the Association shall be:

1 To accelerate the economic growth, social progress and cultural development in the region through joint endeavours in the spirit of equality and partnership in order to strengthen the foundation for a prosperous and peaceful community of South-East Asian Nations;

2 To promote regional peace and stability through abiding respect for justice and the rule of law in the relationship among countries of the region and adherence to the principles of the United Nations Charter;

3 To promote active collaboration and mutual assistance on matters of common interest in the economic, social, cultural, technical, scientific and administrative fields;

4 To provide assistance to each other in the form of training and research facilities in the educational, professional, technical and administrative spheres;

5 To collaborate more effectively for the greater utilization of their agriculture and industries, the expansion of their trade, including the study of the problems of international commodity trade, the improvement of their transportation and communications facilities and the raising of the living standards of their peoples;

6 To promote South-East Asian studies;

7 To maintain close and beneficial cooperation with existing international and regional organizations with similar aims and purposes, and explore all avenues for even closer cooperation among themselves.

THIRD, that to carry out these aims and purposes, the following machinery shall be established:

1 Annual Meeting of Foreign Ministers, which shall be by rotation and referred to as ASEAN Ministerial Meeting. Special Meetings of Foreign Ministers may be convened as required.

2 A Standing Committee, under the chairmanship of the Foreign Minister of the host country or his representative and having as its members the accredited Ambassadors of the other member countries, to carry on the work of the Association in between Meetings of Foreign Ministers.

3 Ad-Hoc Committees and Permanent Committees of specialists and officials on specific subjects.

4 A National Secretariat in each member country to carry out the work of the Association on behalf of that country and to service the Annual or Special Meetings of Foreign Ministers, the Standing Committee and such other committees as may hereafter be established.

FOURTH, that the Association is open for participation to all States in the South-East Asian Region subscribing to the aforementioned aims, principles and purposes.

FIFTH, that the Association represents the collective will of the nations of South-East Asia to bind themselves together in friendship and cooperation and, through joint efforts and sacrifices, secure for their peoples and for posterity the blessings of peace, freedom and prosperity.

DONE in Bangkok on the Eighth Day of August in the Year One Thousand Nine Hundred and Sixty-Seven.

FOR THE REPUBLIC OF INDONESIA:

ADAM MALIK
Presidium Minister for
Political Affairs
Minister for Foreign Affairs

FOR THE REPUBLIC OF THE PHILIPPINES:

NARCISO RAMOS
Secretary of Foreign Affairs

FOR THE REPUBLIC OF SINGAPORE:

S. RAJARATNAM
Minister of Foreign Affairs

FOR MALAYSIA:

TUN ABDUL RAZAK
Minister of Defence and
Minister of National Development

FOR THE KINGDOM OF THAILAND:

THANAT KHOMAN
Minister of Foreign Affairs

Taken from The ASEAN Reader (Singapore: ISEAS, 1992)

Exhibit 2

Ratio of Exports and Imports of Goods and Services

(percentage of GDP at current prices)

	Exports				Imports			
Country	**1960[a]**	**1970[b]**	**1980**	**1990[c]**	**1960[a]**	**1970[b]**	**1980**	**1990[c]**
Developing countries								
NIEs								
Hong Kong	75.2	92.9	87.8	135.4	82.6	89.4	92.4	127.5
Korea	3.3	t4.0	34.0	31.6	12.8	23.6	41.5	32.2
Singapore[d]	n.a.	81.9	165.2	157.5	n.a.	129.8	204.6	175.1
Taiwan	11.5	30.3	52.5	47.7	19.0	30.4	53.7	42.2
ASEAN-4								
Indonesia	7.7	12.8	30.5	25.6	7.7	15.8	22.2	23.1
Malaysia	56.2	46.1	57.5	73.8	43.7	44.4	55.0	69.9
Philippines	10.6	19.1	20.2	27.8	10.4	19.3	26.0	33.4
Thailand	17.4	15.0	24.3	36.8	18.9	19.4	30.6	45..3
China[d,e]		n.a.	3.9	7.4	14.8	n.a.	3.0	5.1
16.6								
Pacific Latin America								
Chile	12.3	16.1	22.8	36.6	16.7	15.8	2-1.0	33.7
Mexico	10.9	7.7	12.6	19.5	12.2	9.7	13.5	12.2
Peru	22.8	19.7	22.2	12.6	22.8	15.7	19.3	11.8
Developed countries								
Australia	13.6	14.8	17.1	16.3	16.9	14.7	17.7	17.3
Canada	17.3	22.5	28.3	24.8	18.5	20.0	26.4	24.4
Japan	9.3	10.8	13.7	10.7	10.9	9.5	14.6	10.7
New Zealand	23.4	22.2	30.5	27.5	25.6	25.0	31.7	26.2
United States	4.9	5.6	10.2	9.9	4.4	5.5	10.7	11.2

Notes:

a) 1984 for Papua New Guinea; 1966 for Hong Kong; 1962 for Indonesia and Peru; and 1961 for Japan and Chile
b) 1972 for China
c) 1989 for China, Hong Kong, Indonesia, Japan, Malaysia, New Zealand and Singapore; and 1987 for Mexico
d) Merchandise trade only
e) Percentage of national income

Source:

- Asian Development Bank, *Key Indicators of Developing Member Countries of ADB*, April 1984, 1985, and July 1986 through 1989; *Key Indicators of Developing Asian and Pacific Countries*, July 1990 and 1991.
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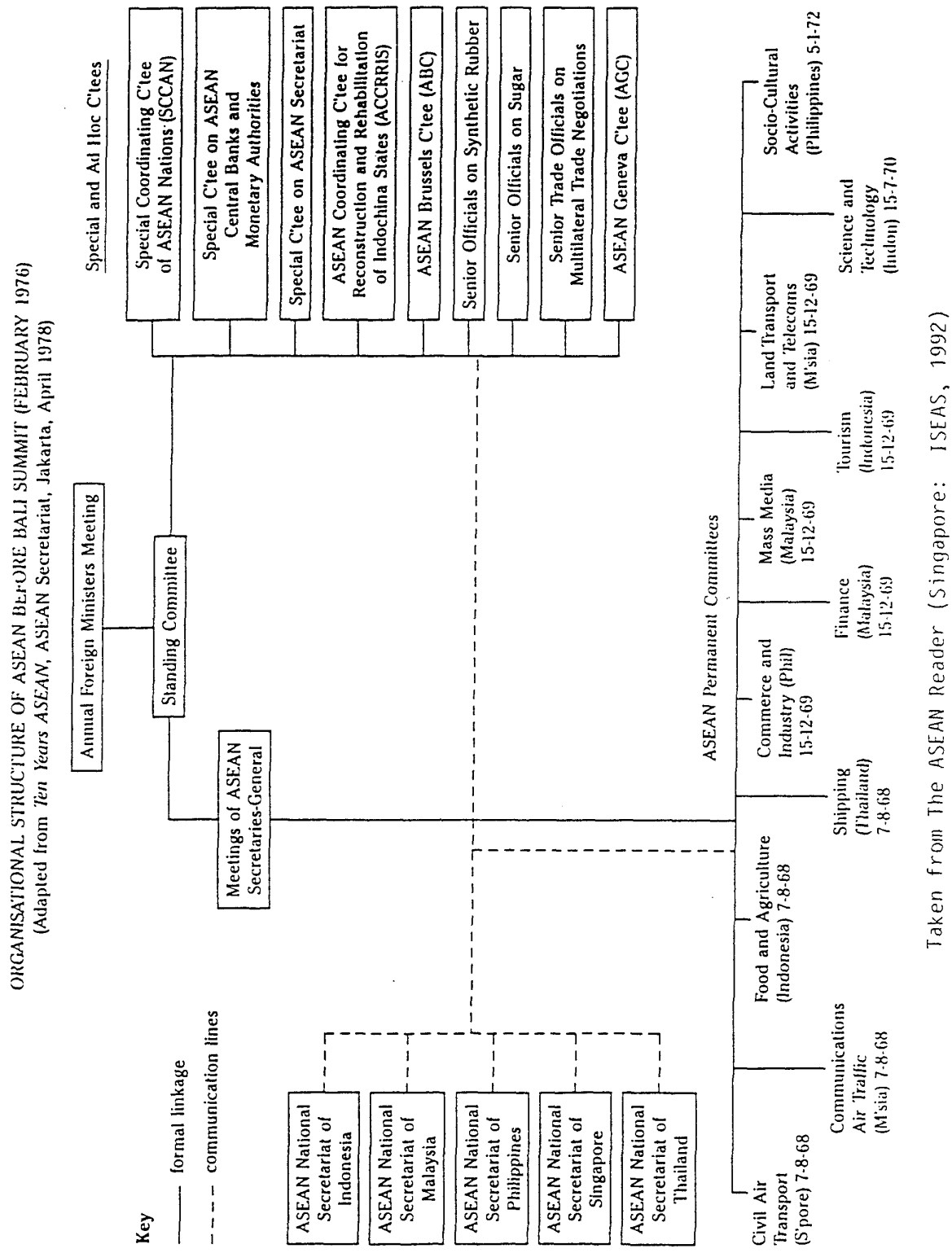
Exhibit 3

Comparative External Indicators for Southeast Asia

Selected Years

	Vietnam			Thailand			Philippines			Malaysia			Indonesia			SEA		
	1989	**1994**	**1996***	**1989**	**1994**	**1996***	**1989**	**1994**	**1996***	**1989**	**1994**	**1996***	**1989**	**1994**	**1996***	**1989**	**1994**	**1996***
1. Growth Rate of Mech. Exports	27.1	20.6	13.9	25.7	17.5	15.8	10.6	18.1	17.8	18.1	24.2	20.0	17.8	7.9	11.0	19.2	17.3	16.3
2. Growth Rate of Mech. Imports	-36.2	14.7	18.9	27.4	16.4	15.0	27.7	20.7	16.0	32.3	36.0	19.0	17.9	11.6	12.1	23.6	22.3	16.1
3. Balance of Trade ($ Million)	-350	-583	-1.176	-2.916	-4.402	-5.094	-2.598	-7.804	-11.126	-4.382	-763	4.561	6.664	7.843	9.517	4.938	-6.251	-3.319
4. Balance on Current Account	-584	-836	-1,318	-2,498	-7,406--	7,8002-	1,456	-3,160	-4,300	257	-6,387	-3,595	-1,108	-3,094	-3,214	-5,613	-21,160	-20,228
a) ($ Million)																		
b) (% of GDP)	-9.8	-5.4	-6.1	-3.5	-5.2	-4.2	-3.4	-5.0	-4.0	0.7	-9.0	-4.0	-1.2	-1.9	-1.6	-2.2	-3.9	-3.2
5. External Debt ($ Billion)	19.4	24.7	26.0	23.5	55.0	75.0	28.7	36.5	38.0	16.3	25.0	28.0	56.2	90.5	101.6	4	231.7	268.6
6. Debt-Service Ratio (%)	18.9	11.9	11.0	16.3	11.2	12.5	25.9	18.7	17.2	15.1	4.7	6.0	35.4	32.9	32.3			
7. Real Effective Ex. Rate (1990=100)				97.4	95.9	-	102.5	108.3		102.3	94.4		101.2	96.8				
Addendum																		
Growth of GDP	7.1	8.8	9.0	7.9	8.5	8.0	1.0	4.3	5.5	5.2	8.5	8.0	5.5	7.4	7.1	6.1	7.5	7.4
Per capital Income (1993, $)		170			2,040			830		3,160			730					
Inflation Rate	194.6	9.9	11.0	4.4	5.0	4.5	13.4	9.0	8.0	3.6	3.8	4.4	8.5	9.2	7.6	6.4	7.0	6.3

Exhibit 4



Taken from The ASEAN Reader (Singapore: ISEAS, 1992)

Exhibit 5

Structural Change and Regionalisation in East Asian Trading Patterns

(Spearman Rank Correlation Coefficients between 1981 and 1990 RCA rankings for overall trade and regional trade)

	Overall Change	Bloc 1 Change	Bloc 2 Change	Bloc 3 Change	Revealed Structural Change Coefficients (RSSC)		
					Bloc 1	Bloc 2	Bloc 3
ASEAN-4							
Indonesia: All	0.51	0.57	0.41	0.46	0.89	1.24	1.11
SITC 5-8	0.45	0.53	0.34	0.39	0.85	1.32	1.15
Malaysia: All	0.70	0.51	0.56	0.60	1.37	1.25	1.17
SITC 5-8	0.65	0.49	0.48	0.57	1.33	1.35	1.14
Philippines:All	0.71	0.56	0.54	0.60	1.28	1.31	1.18
SITC 5-8	0.67	0.50	0.48	0.55	1.34	1.40	1.22
Thailand:All	0.66	0.62	0.47	0.41	1.06	1.40	1.61
SITC 5-8	0.63	0.49	0.44	0.40	1.29	1.43	1.58
Asian NIEs							
South Korea: All	0.61		0.59	0.46		1.15	1.33
SITC 5-8	0.53		0.50	0.50		1.06	1.06
Hong Kong: All	0.77		0.54	0.63		1.43	1.22
SITC 5-8	0.80		0.53	0.66		1.51	1.21
Singapore: All	0.65		0.51	0.57		1.27	1.14
SITC 5-8	0.57		0.49	0.52		1.16	1.10
Japan							
All	0.89			0.78			1.14
SITC 5-8	0.85			0.73			1.16

Notes:

1. Bloc I = ASEAN-4; Bloc 2 ASEAN-4 + NIES; Bloc 3 = ASEAN-4 + NIEs + Japan
2. See text for explanation of RCA and RSCC calculations; see Appendix I for Spearman Rank Correlation Coefficients.
3. Latest year data are for 1989 for all ASEAN-4 countries save Thailand.

Exhibit 6

Spearman Rank Correlation Coefficients for Japan, ASEAN, and the NIEs between:

(a) RCAs Relative to Total World and to Various Asian Groupings in 1988, 1989, 1990

(b) RCAs in 1981 and the Most Recent Year for Total World

	Bloc 1	Bloc 2	World 81
Japan			
All commodities			
World 90		0.79	0.89
SITC 5-8			
World 90		0.68	0.85
ASEAN			
Malaysia			
All commodities			
World 88	0.71	0.87	0.70
SITC 5-8			
World 88	0.72	0.86	0.65
Indonesia			
All commodities			
World 89	0.81	0.90	0.51
SITC 5-8			
World 89	0.85	0.92	0.45
Thailand			
All commodities			
World 90	0.77	0.89	0.66
SITC 5-8			
World 90	0.77	0.90	0.63
Philippines			
All commodities			
World 88	0.82	0.92	0.71
SITC 5-8			
World 88	0.81	0.91	0.67
Asian NIEs			
Korea			
All commodities			
World 90	0.61	0.76	0.61
SITC 5-8			
World 90	0.57	0.68	0.53
Hong Kong			
All commodities			
World 90	0.72	0.81	0.77
SITC 5-8			
World 90	0.76	0.54	0.80
Singapore			
All commodities			
World 89	0.44	0.71	0.65
SITC 5-8			
World 89	0.44	0.70	0.57

Taken from Kreinin M. E. and Plummer M. (1994).

Appendix 1

Calculating Spearman Rank Coefficients: An Example

Following are hypothetical observations of variables X and Y:

	x	y
a.	6	15
b.	12	5
c.	10	10
d.	5	12
e.	9	8

To calculate the rank correlation coefficient (Spearman) first rank (by number) the X and Y observations from the highest to the lowest value, and assign numbers 1 through 5:

x	y
1(b)	1(a)
2(c)	2(d)
3(e)	3(c)
4(a)	4(e)
5(d)	5(b)

Next pair up Y values according to the hierarchy established in X. This underscore differential ranks between X and Y.

Y according to **X ranking**
5
3
4
1
2

As a subsequent step, we take the difference between the values assigned to X and those assigned to Y **when ranked** according to X (call this d); square the difference (d^2, so all values would be expressed in positive terms; and sum the (d^2 to obtain $\sum d^2$

a	d	(d^2)
[1-5 =]	-4	16
[2-3 =]	-1	1
[3-4 =]	-1	1
[4-1 =]	+3	9
[5-2 =]	+3	9
		$\sum d^2 = 36$

The Spearman coefficient is computed by the formula:

$$R_S = 1 - \frac{6\Sigma d^2}{n(n^2 - 1)}$$

with significance test (Student' s "t"):

$$t = r_s \sqrt{(n-2) / (1 - r_s 2)}$$