

1-1-2001

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## Recommended Citation

Sven W. Arndt, "Production Networks in an Economically Integrated Region" first appeared in ASEAN Economic Bulletin Vol. 18, No. 1 (April 2001), pp. 24-34. Singapore: Institute of Southeast Asian Studies, 2011). Deposited here with the kind permission of the publisher, Institute of Southeast Asian Studies, Singapore

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# Production Networks in an Economically Integrated Region

Sven W. Arndt

*This article discusses an approach to “open regionalism” based on regional production networks and component specialization. Component specialization, or intra-product trade, has been shown to be welfare-enhancing. It creates jobs and raises output by improving competitiveness. It is one of the innovative features of the current phase of globalization. It offers groups of small countries opportunities to make regionalism work in ways which the traditional European model does not. It is less discriminatory and less inward-looking than the European model. It stresses regulatory reform and the creation of a single market early in the process of regional economic integration. The welfare gains flow from elimination of market distortions and minimization of trade diversion.*

## I. Introduction

The process of regional integration has tended to follow a fairly set pattern. In the early stages, the focus is on liberalizing trade in goods. Subsequent initiatives address trade in services, the movement of labour and capital, co-ordination of regulatory and other policies, and monetary union. Each successive stage makes its inroads on national sovereignty and policy independence. Still, it is typically not until the very end of a long and drawn-out process that market segmentation may be said to have been effectively eradicated and the region can be truly called a single market. This article argues that the nations of Asia-Pacific might benefit from restructuring the process of regional integration so as to assign top priority to the spread of regional production systems.

There are significant reasons to doubt that a small grouping among any subset of countries in the Asia-Pacific region provides the basis for a viable preferential trade area of the traditional variety. Even when the static framework is broadened to allow for dynamic elements such as scale economies and endogenous growth, most arrangements would not pass the test on strictly economic grounds.

An important characteristic of the traditional approach to regional integration is that structural and market transformation are initially quite limited, so that the benefits of trade liberalization depend almost entirely on the extent to which existing resources can be used more efficiently. Significant changes in industrial structure typically do not take place until economic

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integration has reached the “deeper” stages. In the European Union (EU), for example, the Single Market project (“Europe 1992”) occurred decades after the creation of the original customs union (European Economic Community or EEC) and free trade area (European Free Trade Area or EFTA) in the 1950s. It represented the community’s response to the failure of the earlier phases of integration to eliminate market segmentation.

This article examines an approach to regional integration which allows industrial structure to change early in the process. The structural change envisaged here involves creation of regional production networks and dispersion of manufacturing processes across national frontiers. The result would be *regional* as opposed to *national* industries. Regional initiatives are more likely to be welfare-improving if they include economic integration based on cross-border production networks.

Section II develops the basic idea and establishes a benchmark example of traditional integration against which to evaluate the effects of the proposed alternative. Section III introduces regional production into the framework and assesses the welfare gains thereof. Section IV discusses varieties of cross-border procurement and the role of foreign direct investment (FDI) and multinationals in the context of regional production networks. Section V deals with trade liberalization in the presence of production networks to show how the latter tends to create pressures favouring non-discriminatory trade liberalization. It also considers the effect of offshore procurement on wages and employment. Section VI considers dynamic factors like scale economies. Section VII concludes.

## II. Creating a Regional Economy

Regional economic integration has been an important part of the globalization of many national economies. While Europe provides the most complex example of the interplay of multilateral and regional forces, both the Western Hemisphere and the Pacific Rim have seen

significant regional initiatives. Unlike Europe, however, most of these approaches have been more cautious, with members wary of becoming too involved with their trading partners and losing too much sovereignty and economic policy autonomy in the process. Although Mercado Común del Sur (MERCOSUR) in the Southern Cone of Latin America has opted for customs union, most initiatives have been more circumspect. In the North American Free Trade Area (NAFTA), for example, members were content to settle for a free trade area and thus to retain greater trade policy independence. Although some observers have called for the deepening of NAFTA, including monetary integration, the political sentiment does not in general appear to be ready for that level of commitment to the regional option.<sup>1</sup>

This reluctance to commit more fully to the regional idea prevails in the Pacific area as well. In part, such sentiments are driven by concerns over the loss of national sovereignty, but in part they also reflect the fact that the standard regional arrangement may not be so obviously superior to less discriminatory, more plurilateral and multilateral approaches. There is general agreement among expert observers, for example, that the Association of Southeast Asian Nations (ASEAN) and its trade arrangement, the ASEAN Free Trade Area (AFTA), do not constitute an optimal economic area, because the elements of trade diversion are likely to dominate those of trade creation (Panagariya 1998).<sup>2</sup>

The countries of the Pacific Rim are quite aware of this constraint inherent in the traditional model of regional integration. They have reacted by exploring alternative approaches, which seek to contain the forces of trade diversion and to encourage trade creation. This is the avowed objective of “open regionalism”, which strives for better balance between the benefits of preferential trade liberalization and the costs of damaging trade linkages with the rest of the world. The search continues for strategies that are less openly discriminatory than the traditional approach.

Any grouping of small countries in Asia-Pacific along traditional lines is bound to exclude the

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world's low-cost producers in many product categories and thus to ensure that trade diversion will dominate. That will certainly be true of products that tend to be highly skill-, research-, and capital-intensive. AFTA is no exception: a preferential trade arrangement which excludes Europe, the United States, Japan, Korea, Taiwan, and China is a virtual guarantee that trade diversion will dominate trade creation.

For many of Asia's economies, trade relations with countries unlikely to become members of a regional preference area are often more important than trade with neighbours. Countries may be neighbours, but their geographic proximity is often greater than their economic interaction. The United States and Japan may be farther away geographically, but they loom large as key trading partners. Recognition of this reality is one reason for the existence of the Asia-Pacific Economic Cooperation (APEC) forum, which covers a much larger area and includes all the major players of the region. But APEC has thus far not been able to solve the problem of how to make its vision of "open regionalism" work. There are at present more dreams than workable proposals for implementing the concept.<sup>3</sup>

The debate has followed traditional lines, which start with liberalization of trade in goods. There is hope, of course, that increased trade will spur industrial growth and development, but growth and industrialization are typically considered at the national level. Each country formulates trade expansion and growth policies according to national priorities. There is little or no co-ordination of policies among countries. It follows that national policies will at times be in cross-border harmony, but in conflict at others. To the extent that the growth goals pursued by the countries of the region are similar, their policies and actions will possess significant competitive elements.

Most emerging economies in the region have been pursuing export-led growth strategies in which selling into the United States and other advanced-country markets has played a major role. Their exports are very similar, because they all cater to demand developments in the same markets. When world demand rises for a

product — steel, textiles, apparel, consumer electronics, computer components, and so on — every nation moves to expand capacity in order to raise exports. Every country behaves quite properly as the small, price-taking member of the global economy, whose own capacity expansion will have no effect on world market conditions. But when the actions of all are cumulated, the impact on world markets and prices may not be trivial after all.

The products involved are "national" in the sense of being made more or less entirely inside a particular nation. If we take the case of ASEAN, for example, we find firms which engage in outsourcing, but outsourcing across borders is more typically carried out by extra-regional multinationals that operate in the region than by indigenous firms.<sup>4</sup> Cross-border sourcing faces obstacles from trade and other policy barriers, as well as communication and transportation costs, which tend to be higher between than within nations (Athukorala and Menon 1997). Cross-border production, in which indigenous firms from one member country invest in production facilities in another, is rarer still.

An important aspect of the current wave of globalization, however, is precisely the role that trade liberalization and innovations in communications and transportation technologies have played in facilitating it. Cross-border sourcing and offshore production of parts is now easier than ever. The main theme of this article is that emerging nations stand to reap welfare gains and improve competitiveness if they move away from the "national" model of industrialization policy toward more regional, collaborative perspectives.

The basic idea is to think of the region rather than the nation as the production base and to spread component production around the region in accordance with comparative advantage. The object is to raise efficiency, reduce production costs, and increase competitiveness, and thereby to gain market share for all the region's players. The key features of this argument are developed below in the context of a standard trade model.<sup>5</sup>

*The Welfare Effects of Component Trade*

It is well known that the move from most-favoured-nation (MFN) tariffs to preferential trading arrangements may raise or lower national welfare (Johnson 1967). The outcome generally depends on the relative magnitudes of the trade-creating and trade-diverting effects. The former arise in the shift from domestic production to more efficient sources in the Free Trade Area (FTA) partner country; the latter are associated with the shift from low-cost, non-member suppliers to higher cost, less efficient producers in the partner country. Net trade diversion becomes more likely as the cost differentials between partner country and non-members rise.

The following analysis starts with traditional static considerations of trade in end products. Dynamic elements are taken up in a subsequent section where it is shown that they, too, are more likely to be stronger in a properly constituted regional production network. The basic structure of the argument is illustrated in Figure 1, where curve TT represents the production possibility set of a small country. Prior to creation of the preference area, the country has a most-favoured-

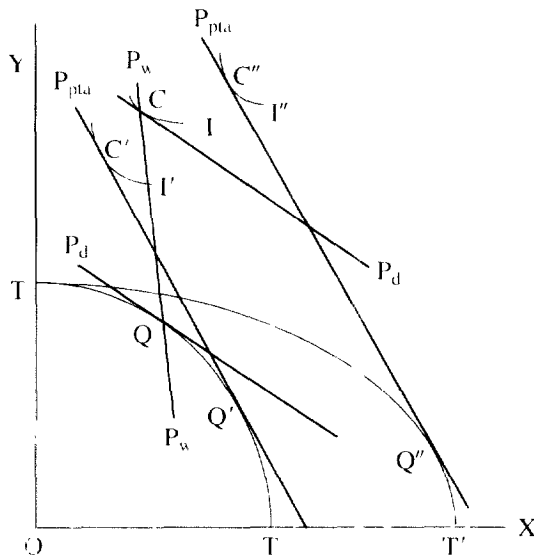
nation tariff (MFN) on imports of good Y. The world price ratio is given by  $P_w$ , so that  $P_d$  is the tariff-inclusive domestic price ratio. The country produces at Q and consumes at C on indifference curve I, exporting final good X in return for imports of final good Y.

After implementation of the preference area, the relative commodity price will lie somewhere between the world price,  $P_w$ , and the initial MFN tariff-inclusive domestic price  $P_d$ . Let that price be  $P_{pta}$ . In general, the preference area is more likely to be trade-diverting as  $P_{pta}$  approaches  $P_d$  and thus moves away from  $P_w$ . Intuitively, net trade diversion takes place as the additional resource cost implicit in the difference between the world price and the preference area price exceeds the gain from the reduced cost implicit in the difference between the MFN price and the preference area price.

In the figure, the preference area is depicted to be trade-diverting, i.e. welfare-reducing. Production has moved to  $Q'$ , while consumption is now located at C' on a lower indifference curve,  $I'$ . This is a well known result which does not require extensive commentary. Its role is to serve as a benchmark for assessing the effects of cross-border component sourcing. Suffice to note here that for many groupings of emerging economies, the outcome is more likely to be welfare-reducing than welfare-creating because the world's low-cost producers of goods affected by the preference area will too often remain on the outside. The nations of ASEAN, for their part, are well aware of the problem.

It is often asserted that the repercussions enumerated above are too static and depend too much on existing conditions and structures. In particular, it is argued that a variety of dynamic effects, including scale economies, FDI, and endogenous growth, can more than compensate for the poor showing of the static analysis. While there is doubtless something to that argument, even the dynamic effects will often be limited by the small scale of national markets and the geographic area encompassed by the regional arrangement. Creation of a regional economy, with regionally structured production networks, is likely to be more beneficial than preferential trade liberalization

FIGURE 1  
Regional Production Network



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which leaves the member economies segmented. We turn to that issue in the next section.

### III. Trade Liberalization versus Market Integration

While end products have traditionally played a dominant role in international trade, offshore sourcing of components and offshore assembly have grown rapidly in recent years (see, for example, Ng and Yeats 1999 and Yeats 2001). This growth has been made possible in part by reductions in trade barriers and in part by innovations in transportation and telecommunications technologies, which have sharply reduced the cost of co-ordinating cross-border sourcing and production.

The welfare implications of cross-border production have received considerable analytical attention recently.<sup>6</sup> It has been shown in a variety of modelling contexts that offshore sourcing or cross-border production of components can be strongly welfare-enhancing. It has been further shown that such foreign procurement creates jobs and expands output in the industries in which it occurs and that it frequently raises wages.

While the factors which determine these outcomes vary across models and empirical instances, the intuition is simple and compelling. If foreign sourcing of a component is cost-saving, then it improves the competitiveness of the end product of which it is a part. If the firm which makes the end product is a *price-taker*, then the reduction in production costs increases profitability and creates an incentive to expand output. If the firm is a *price-maker* in end product markets, the reduction in costs brought about by offshore sourcing enables it to lower price and thus gain market share. Once again, output rises.

In a Heckscher-Ohlin framework, competitiveness is equivalent to comparative advantage, and comparative advantage depends on resource endowments and factor intensities. When final products consist of multiple components whose production technologies differ, then factor intensities will vary across components. The factor intensity of the product itself is simply the

weighted average of the factor intensities of its constituent parts. Varying factor intensities across components mean that countries' comparative advantage will vary across components, just as it varies across final products. A labour-rich, low-wage country will possess comparative advantage in labour-intensive components, and so on. These considerations apply with equal force to the factor-intensity of product assembly.

It follows that if countries involved in the regional trading initiative specialize in component production according to the dictates of comparative advantage, welfare will rise all around. The effect on productive efficiency of component specialization is similar to the effect of technical progress. In the industry or sector in which foreign sourcing of components takes place, a given input of resources is able to produce a larger output. In the context of the production possibility curve depicted in Figure 1, the effect of foreign sourcing is to shift out the curve along the axis representing the industry or sector in which it occurs. In the figure, that sector is taken to be the X-sector, which is this country's export sector. On the assumption that the country is a price-taker in goods markets, the effect of the outward shift of the production possibility curve is to move production from  $Q'$  to  $Q''$  and consumption from  $C'$  to  $C''$  on indifference curve  $I''$ . This represents an improvement in national welfare relative to regional integration without component specialization. It is clear that preference arrangements accompanied by component specialization are more likely to be welfare enhancing than those which are not.

Note that the move to foreign sourcing shifts the output mix away from the import good, Y, to the export good, X, as is evident in the relative positions of production points  $Q'$  and  $Q''$ . In other words, offshore sourcing enables the X industry to raise output.

Foreign sourcing may, of course, take place in either or in both sectors. If it occurs in the Y-sector only, then the production possibility curve shifts out along the vertical axis. It is easy to see that this restructuring is also welfare-improving relative to a preference arrangement without components

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trade. In this case, production of Y expands while production of X declines.

If foreign sourcing or production takes place in both sectors, then the outward shift of the production possibility curve will be less biased and welfare will improve once again relative to preference arrangements without component trade. In the context of a balanced expansion, output will tend to rise in both sectors, while employment of both factors will shift into the sector which uses the country's scarce factor relatively intensively.

An important feature of this regional rearrangement of production is that every country which moves to offshore procurement of components in which it has comparative disadvantage will experience an outward shift of its production possibility curve and a welfare improvement relative to the traditional case in which each country produces the entire product at home.

Thus, in the traditional European approach, the process of regional development is initiated by creating a system of discriminatory trade barriers designed to protect the region's producers from the outside's low-cost competitors. The focus is squarely on facilitating intra-regional trade rather than building a regional market and stimulating the creation of regional production networks and regional firms. Import-substitution matters more in the early goings than export promotion. If the programme gives rise to border-crossing investment, it is typically tariff-jumping investment on the part of the aforementioned outside competitors. Not surprisingly, markets remain substantially segmented and essentially national long after trade liberalization has been completed. As noted, Europe did not get to the "single market" project until more than three decades had elapsed.

The approach envisaged here starts with the creation of an integrated region whose purpose is not to protect regional producers from outside competition, but to enable the region's producers to become more efficient and competitive through location decisions that are not constrained by national frontiers. Trade liberalization is essential, but mainly to permit the unimpeded flow of components and end products within the region.

This type of trade liberalization is not discriminatory, because obstacles to the inflow of cheap components from non-members need to be removed as much as obstacles to the intra-regional flow of components. This is nicely consistent with the ideal of "open regionalism". The cost-saving consequences of the regional market serve not only to make indigenous producers compete more effectively in the region's market with outside competitors, but to enable the region's exports to compete in outside markets. If we return to the example of AFTA, its purpose then is not so much to create a protected regional market within which indigenous firms trade products, but an integrated arena in which production on a regional basis makes the region's products more competitive in world markets.

#### **IV. Varieties of Cross-Border Sourcing**

Offshore procurement of components can take place at arms length or through the activities of multinationals. The former approach will be most appropriate in the case of standardized parts sold in organized markets. This type of trade already exists, but more would take place if policy barriers and transactions costs were to fall further.

At the other end of the spectrum lies trade in components that are custom-made for particular products. Boeing and Airbus procure components abroad that are made specifically for particular airplanes and thus have no alternative uses. The maquiladora operations of American and other foreign firms in Northern Mexico represent an example of offshore final-product assembly. Assembly is procured offshore because it is relatively labour-intensive. In these instances, foreign procurement consists of foreign production carried out by partner companies or affiliates. This is where multinationals play an important role and where flows of FDI typically precede the flow of components.

The essential point here is that when costs of component production vary across countries, industrial strategies that rely on production sharing and production networking across national borders will generate welfare benefits that will exceed

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those available under strictly national approaches. For this approach to work, however, countries must not only remove border barriers to the flow of components, but create a regional regulatory framework that is neutral in its effects on location. Inasmuch as regional dispersion of production requires managers, technicians, and others from one nation to work in another, laws and regulations that facilitate the cross-border movement of such persons need to be implemented. The object here is not only to support the activities of third-party multinationals, but to encourage indigenous firms to become regional firms.

At the completion of this exercise, countries may be expected to be specialized in producing components for use not only at home, but throughout the region. This will make for longer production runs, as firms expand to supply their own and partner country needs. Longer runs open opportunities for scale economies that would not be available at lower output levels. The cost savings generated by scale effects improve competitiveness and thus permit output levels of final goods that will be larger than otherwise.

Component specialization clearly works well when end products are homogeneous, for it allows markets in components to develop. But it also applies to products which are differentiated by variety and thus have custom-made components. To the extent that consumers value variety, differentiated models of a given product type may be produced in different areas of the region, but component specialization can nevertheless play an important role in reducing costs and increasing efficiency and competitiveness. There may not be scale economies present in the assembly of the final, differentiated product, nor in the production of its customized components, but scale economies in the common components can contribute to cost savings.

#### **V. Market Opening through Component Specialization**

As noted earlier, Asia's policy-makers are seeking to avoid regional arrangements which upset their

global trading partners. They are under pressure from the United States, the European Union and other advanced countries to open up their economies to imports. Their reluctance to comply is often based on the fear that without some protection from the competition of imports from advanced countries, they will not be able to move up the value chain towards more technologically complex, skill- and capital-intensive products.

While this argument has some merits, import protection may not be the best way to solve this problem. Tariffs imposed on imports of the end product protect all components, without distinguishing between components in which a country has comparative advantage and those in which it does not. It places the emphasis too heavily on making the entire product, rather than making the parts in which the country possesses comparative advantage. It is not necessary for a country to produce the entire product to become a world player in new, more advanced industries. The focus should be on parts and components, which use intensively the factors of production and the technologies with which the country is relatively well endowed.

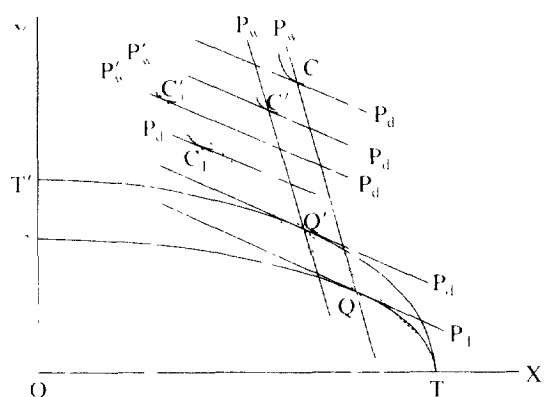
These considerations apply to assembly as well. When assembly of an end product is skill-, capital-, and technology-intensive, it is most efficiently carried out by more advanced countries. The emerging economy should shy away from making the entire product, and concentrate instead on supplying components in which it has comparative advantage. Even when assembly lies within its comparative advantage domain, it may eschew production of the entire product, opting instead to import components in which it suffers comparative disadvantage.

The essentials of the argument are illustrated in Figure 2, in which good Y, measured vertically, is the country's import good. We suppose that this is the product in the manufacture of which the country wishes to become more proficient. Suppose that, in pursuit of that goal, the country has imposed an MFN tariff on imports of the full product, as a result of which the home price ratio,  $P_d$ , has risen relative to the world price,  $P_w$ .

In the figure, two tariffs of different magnitude



FIGURE 2  
Component Specialization



are considered. To minimize clutter in the figure, the two tariffs are assumed to produce the same domestic, tariff-inclusive price. That means that the larger of the tariffs is imposed on a lower world price of good Y,  $P_w$ . This tariff creates a large wedge between the world price,  $P_w$  and the home price. The smaller tariff creates the slimmer wedge between the domestic price and the world price  $P'_w$ . In the initial situation, production is at Q and consumption, respectively, at C and  $C_1$ .

Suppose that the Y-industry implements outsourcing of components in which it has comparative disadvantage, with the consequence that costs fall and the production possibility curve shifts out to  $TT'$ . For a small, price-taking country, relative world prices are unaffected by this move, and if tariff rates remain unchanged, then the domestic commodity price ratio is also unaffected. As a result, production moves to point  $Q'$  in both the high- and the low-tariff scenario. In the latter, consumption moves to point  $C'_1$  on a higher indifference curve; in the former, consumption moves to point  $C'$  on a lower indifference curve. It is clear that the high tariff is inimical to the country's own welfare considerations.

#### *Production Networks, Wages, and Employment*

As noted above, employment and output will tend to expand in the sector which engages in cross-

border sourcing of components. The effect of cross-border sourcing on relative factor prices depends on the sector in which it takes place. In the Heckscher-Ohlin context, it does not depend on the factor-bias of the sourcing innovation. If cross-border sourcing takes place in the labour-intensive sector, the wage-rental ratio rises; if it takes place in the capital-intensive sector, the ratio falls.<sup>7</sup>

Thus, if countries in Asia-Pacific switch to offshore sourcing in their import sector, which will tend to be the capital-intensive sector, then the wage-rental ratio will move against labour. That does not mean that wages will fall absolutely, but that they will rise less rapidly than capital rentals (or the wages of skilled workers, if skilled workers are the other factor).

If, however, cross-border sourcing is combined with reduction of tariffs on the imported good, then the consequent reduction in the price of Y will tend to raise the relative wage. Hence, trade liberalization in the Y-sector, combined with offshore sourcing of the capital-intensive component by that sector, will reduce the extent to which relative wages decline and may raise them if the tariff reduction is significant.

#### **VI. Scale Economies and other Dynamic Elements**

With some notable exceptions, the countries in Asia-Pacific tend to be small. The home market is too small to allow firms to fully exploit scale economies in many branches of manufacturing and services. While the region offers some opportunities for large-scale production, the various national economies are at present too segmented to make a single regional market. Even with a fully integrated market, however, access to the United States and to other large advanced economies is important. This ensures that the smaller countries of the region will continue to pay attention to their trade with the rest of the world.

If countries abandon the notion that every product must be fully produced at home, regional specialization at the level of parts and components offers not only the static welfare gains discussed

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in the preceding sections, but new opportunities to exploit scale economies. When every country produces its own components, production runs are likely to be small for the aforementioned reasons. But if production of a given component is allowed to take place in the country or countries where costs are lowest, then production runs will be longer and hence scale economies will become accessible.

For this structure to work, man-made and natural barriers must be removed and co-ordination and transportation costs must be brought down. Both policy-makers and the private sector have a role to play in this respect. Governments must eliminate policy obstacles which prevent firms from producing anywhere in the region. This task is clearly more complex than the traditional focus on the removal of trade barriers. The objective is not simply to free up the flow of goods, but to create an integrated regional production arena.

For its part, the private sector must invest in services networks that will permit firms to co-ordinate production across borders. If the conditions for a fully integrated regional economy are in place, then firms will be able to make plant location decisions from the regional rather than the national perspective. This will give them a competitive edge in the world market, where significant elements of market segmentation continue to exist.

Politicians and the public must abandon the habit of viewing the outflow of investment capital as inimical to national welfare. In an integrated regional production arena, investment by a firm in country A in a component-producing facility in country B may be more beneficial to the regional and international competitiveness of that firm than investment of the same magnitude in the home industry. Such investment outflows will make economic sense if the consequent reduction in the cost of an imported component cuts overall costs by more than the best domestic investment alternative. In that case, the effect of an outflow of capital is to shift out the domestic production possibility curve. Home output and employment rise when the industry invests abroad.

## VII. Concluding Comments

The countries of Asia-Pacific continue to search for ways of making regionalism work for them. The traditional approach to regional economic integration, of which the European Union is the best example, does not appear to offer much in the way of benefits, especially for groupings of smaller countries which exclude the region's larger economies. The "European" approach is basically inward-looking, discriminatory, and import-substituting in its orientation. It tends to be preoccupied in its early stages with trade liberalization, leaving creation of a single regional market to later phases of the process. As the Europeans have learned, however, trade liberalization alone cannot eliminate market segmentation and thus cannot create the regional production arena that is essential for industrialization and development.

The approach suggested in this article places the focus on the development of regional production networks. The objective is to make the region's producers more efficient and competitive in regional and global markets. This is a more outwardly oriented approach, which is focused less on keeping third-party goods out than on facilitating exports to third-party markets.

Furthermore, whereas the traditional approach emphasizes comparative advantage at the product level, the proposed approach stresses comparative advantage at the level of parts, components, and assembly. A production network, spread throughout the region and based on component specialization, allows components to be produced and product assembly to be conducted according to the dictates of comparative advantage. Production costs are cut throughout the region, making the region's producers more competitive in world markets. The larger production runs permitted by component specialization make scale economies more accessible and thus add further to cost competitiveness. Implementation of a regional system of production networks requires harmonization of regulatory and other policies and the removal of barriers to the flow of services, persons, and finance. These changes need to be

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implemented early in the process of regional integration.

Note that nothing said thus far requires this regionalism to be discriminatory. It can be entirely "open". There is no need to limit production access to regional firms. Right of establishment can be available to all comers. Rules of origin

make no sense in a framework in which the objective is to obtain parts and components, and to undertake assembly, where costs are lowest. If a preference area along traditional lines is pursued nevertheless, say, for political reasons, then component specialization is needed to reduce the likelihood of net trade diversion.

#### NOTES

- See, for example, Courchene and Harris (2000) and Grube (2000).
1. Traditional trade theory focuses on the gains from trade by assuming that countries' resource endowments are given. As economic integration deepens, FDI is also liberalized, and its consequences need to be taken into account (Athukorala and Menon 1997). In the traditional model of preferential trade liberalization, investment inflows into the region from non-member countries are motivated by the need to jump tariff barriers. Investment flows in and productive capacity is established in order to serve the local market. The focus in this article is on investment flows within the region, as well as inflows from outside the region, which facilitate the dispersion of production processes across national frontiers.
  2. See Bergsten (1997) for an initial attempt to define the options under "open regionalism". Also see Srinivasan (1998).
  3. See Ng and Yeats (1999) for a detailed accounting of the growth of components trade in Asia.
  4. Although many of the insights can be established in the context of the familiar *partial equilibrium* framework, the model used here is one of *general equilibrium* in order to provide a simple view of economy-wide effects.
  5. See Arndt (1997, 1998), Dearnorff (2001), and Jones and Kierzkowski (2000, 2001) for detailed analyses. See also Krugman (1995).
  6. For details, see Arndt (1997, 1998, 2001).

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