

IS EAST ASIA BECOMING MORE INTERDEPENDENT?

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Most readers will likely answer “yes” to the question posed in the title, and may indeed regard it as asking something obvious. “Yes” is the right answer—we show that interdependence, defined as the region’s preference for trade with regional partners, is increasing—but the underappreciated fact is that “yes” has become the right answer only recently. Until the 1980s, the East Asian region was generally *disintegrating*—the trade of virtually all of its economies was becoming *less* regionally biased. This is still so for several of the region’s key economies, including China. On average, the trend toward of greater independence began only a few years ago.

The goal of this paper is to understand the biases of East Asian trade, along with their causes and consequences. Toward this goal, we update our previous study (Petri, 1993) that first placed East Asian interdependence into historical perspective. That study traced in detail the determinants of the region’s initial waves of integration, and concluded that intra-regional trade intensities had declined over most of the post-World War II period. It did find, however, that the decline stopped for several countries in the mid-1980s, and suggested that a new era of integration might have begun.

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One reason why the results discussed here may seem surprising is that in popular discussion interdependence is often associated simply with the level of intra-regional trade, rather than its bias toward regional partners, as understood in this study. East Asian intra-regional trade has grown rapidly, but mostly because the region's overall imports and exports have grown. Even a random assignment of its trade would have generated increased intra-regional trade. The index calculated here examines the region's *bias* for its own products—that is, the extent to which its intra-regional trade exceeds randomly predicted trade. With nearly fifteen years of additional data since 1993, we can say comfortably that the region's trade bias is now rising, but this increase is still gradual, and far from uniform across economies.

A key motivation for examining interdependence is that the politics of regional relationships is gaining importance in East Asia. Many countries are planning or negotiating trade agreements primarily focused on the region (Hufbauer and Wong, 2005); various new regional dialogues involving permutations of ASEAN and other regional economies are underway; and there is increasing interest in financial integration and a common currency (Lamberte, 2005). These trends all reflect a desire for greater regional interdependence, and reflect policy interest in measures that will bias economic activity in favor of regional partners. They are therefore followed with interest also in countries adjoining the region—Australia, New Zealand, as well as South Asia, Russia, and the United States, which might be disadvantaged by increased intra-regional bias (Curtis, 2004). What is at stake, what can or should governments do about these trends, and what effect are our decisions likely to have on outcomes?

I. Does Interdependence Matter?

The notion of the “intensity of interdependence,” as analyzed in this study, addresses the idea of an uneven playing field—a world in which natural or policy barriers are lower for commerce with some partners than with others, and therefore bilateral or multilateral commercial relationships are deeper with some partners than with others. Distance is one example of such a differential barrier, and in this case, transport costs (say, proxied by geographical proximity, or of co-location on a navigable body of water) lead to differences in the intensity of commercial relationships. Studies of interdependence suggest that there are many factors beyond distance that tilt the economic playing field: language, culture, past relationships, migration, and a host of policy factors also play important roles. For example, in the case of East Asia, we argue below that historical accidents first created high levels of interdependence, which then waned over time, but other economic factors are now increasingly important in reestablishing regional linkages.

The intensity of interdependence matters for both positive and normative reasons. On the positive side, interdependence can affect the performance of an economy by tying its activities to those of intensely interdependent partners. On the normative side, the relative intensities of a country’s interdependencies can be affected, at least to a degree, by policy. In this regard, Lamberte (2005) draws a useful distinction between regionalization, integration created by market forces, and regionalism, by which he refers to policy initiatives to increase intra-regional bias. Thus, understanding how the intensity

of interdependence impacts an economy and how policies can generate “better” interdependence are of interest for analysis as well as practice.

Interdependence and Performance

Consider first how interdependence affects economic performance. The channels through which interdependence works include mechanisms commonly studied in trade theory, as well as more exotic linkages. Conventional “gains from trade”—the most obvious channel—increase with trade intensity (the volume of trade among partners) provided that intensity of trade between partners starts out “too low,” that is, short of the optimal level, due to policy or other changeable barriers. These gains are limited: the welfare effects of increases in trade intensity will turn negative once intensity is pushed beyond the optimal level—say, because preferential trade agreements cause trade diversion to an inefficient trade partner.

In addition to gains from trade, interdependence also effects performance by less conventional channels, including connections among the growth *rates* of different economies rather than welfare *levels*. Evidence of such linkages is suggested by the typically high correlation of growth of rates of countries in the same region. While this correlation partly reflects common regional characteristics (some of which may themselves be the result of *past* interdependence), it also reflects a variety of linkages that transmit growth among interdependent partners.

Broadly, these linkages involve (a) the transmission of macroeconomic fluctuations and (b) production spillovers (externalities) from one economy to others.

Macroeconomic linkages include the direct transmission of shocks among economies through shared markets for goods and services, capital, and possibly labor. These linkages help to explain the correlation of partner growth rates over the business cycle, but offer less insight into longer-term correlations. (In the longer term, such direct linkages might argue for negative correlations between the growth rates of partners due to their competition for shared resources, but correlations actually tend to be positive.)

According to Montiel (2003), macroeconomic linkages appear to be strengthening in East Asia. To be sure, even macroeconomic transmission—say in the case of strong interdependence with a regional “locomotive” partner—can drive performance positively over a significant stretch of time.

By *spillovers* we mean externalities generated by economic activity in one economy on the activities in another economy. Several types may be at work. Robust intermediate goods industries in a country or region (offering more, and more economical parts) may lower the costs of production for related downstream industries in closely linked partner economies. In other words, clustering associated with economies of scale in intermediate production may take place international regional centers, as well as centers within countries. The copying of non-proprietary products or processes (another type of externality) is also facilitated by intense commercial relationships. And it may be easier or less risky to start certain industries in economies closely linked to others that already

have industries with similar characteristics, through so-called demonstration effects. In these and other types of externalities, it pays to be linked to a partner economy or region with desirable industry characteristics.

Can interdependence be managed?

If interdependence yields benefits (or costs, depending on the characteristics of the partner), can it be managed through policy? The answer is generally yes, although the scale of required interventions may be large, and the extent of the effect may be small.

Trade policy, and particularly regional trade liberalization, is the most obvious intervention for managing interdependence. Preferential liberalization enables favored partners to strengthen bilateral or regional trading relationships. Bonaface (2005) shows how such waves of regionalism have swept over East Asia in the past. Other strategies may include strengthening transport links, providing trading information, encouraging migration, and increasing educational and cultural connections. As we shall argue below, the key drivers of interdependence in East Asia have tended to involve varied channels of economic cooperation rather than preferential agreements (as in Europe).

In either case, governmental initiatives that affect interdependence tend to be leveraged by market reactions. Initiatives that promise to increase trade tend to give rise to reinforcing public or private investments such as roads and ports, or more frequent scheduled passenger or cargo links. As these investments reduce the cost of bilateral transactions, the targeted relationship further intensifies. The growing intensity of the

relationship may also increase the information available about the partner countries as individuals and companies on both sides accumulate experience in conducting the trade. And as the value of such experience increases, more people are prompted to learn the relevant languages, market characteristics and commercial customs.

While the scale of effort required to change the pattern of a country's trading relationships may be large, governments still often believe that some connections—particularly ties with the dynamic economies of East Asia—are worth building and can be built. Typically non-economic objectives and tools play an important role in regionalism; historically, regional designs have been often pursued by military means, especially when raw materials are involved. In more recent times, countries have also adopted regional visions based on non-economic goals (for example, eliminating the possibility of war in Europe, or reducing migration from Mexico to the United States), but have pursued these largely through preferential trade policies rather than force.

Is there value in managing interdependence?

The management of regional relationships involves creating regional biases that may follow economic logic (when policy “internalizes” positive externalities associated with greater interdependence), or may run against it (when policy targets linkages for non-economic reasons, or to favor one country at the expense of others). In the positive case, government policy helps to increase international spillovers (from operating in a closely integrated regional economy) that are not adequately valued by markets, and hence raises global welfare.

In the negative case, the policy will largely extract (divert) benefits from other partners, and hence lower global welfare. For example, several countries may try to build intense ties with a dynamic partner such as China, or group of partners such as East Asia. As they bid for the locomotive's business—for example, by granting trade concessions or building transport systems appropriate for bilateral trade—at best they drain the gains from the relationship by transferring the gains to the desired partner, or at worst they generate unproductive investments (underutilized roads, airports, etc.)

Whether investments in regional integration are worthwhile will thus depend on whether these investments are merely “contests” or have positive-sum effects (say, by internalizing externalities). These are difficult, empirical questions that need to be addressed with careful analysis; unfortunately, there is little evidence that the nature of these questions is well understood, or that the appropriate analysis is underway, in the numerous regionalist attempts underway in East Asia today.

II. Interdependence in East Asia

Measures of Interdependence

Three different measures of interdependence are typically used in the literature. Let x_{ij} represent exports from country i to country j , and the subscript $*$ (in place of i or j) represent summation across all i or j . Thus x_{i*} represents the total exports for country i , x_{*j} the total imports of country j , and x_{**} total world trade. In this notation, the three commonly used measures of interdependence are defined as follows:

- (a) The absolute measure of trade intensity deflates a particular bilateral (or intraregional) trade flow with overall world trade.

$$A = x_{ij}/x_{**}$$

- (b) The relative measure of trade intensity deflates the absolute measure with either the share of the exporting country on world exports, or the share of the importing country in world imports.

$$B = A/(x_{i*}/x_{**}) = x_{ij}/x_{i*} \quad \text{or} \quad B' = x_{ij}/x_{*j}$$

- (c) The double-relative measure of trade intensity (sometimes called the gravity measure) deflates the absolute measure *both* with the worldwide export share of the exporting country and the worldwide import share of the importing country.

$$C = A/(BB') = x_{ij}x_{**}/x_{i*}x_{*j}$$

Of these three measures, A relates the scale of a particular bilateral (or intraregional) trade flow to worldwide trade flows, B compares it to the overall trade flows of one or the other of the partners participating in the relationship, and C compares it to the overall trade flows of both partners.

These measures could evolve differently over time. For example, exports from X to Y could grow rapidly compared to world trade (rising A measure), but could still fail to keep pace with the growth of X 's overall exports (declining B measure) and/or Y 's overall imports (declining B' measure). Thus, even fast-growing trade flows can “shrink” relative to the exports of the exporter and the imports of the importer. The C measure corrects for this; it is a true measure of intensity that increases only if the trade grows

faster than would be justified by the general growth of the exports and imports of the trading partners.

The measures address different questions. The absolute measure (A) of trading intensity is useful for explaining, say, how the stakes of different countries change in world trade negotiations. The relative measures (B, B') are appropriate for assessing the importance of partners to each other. Finally, the intensity measure C helps to judge the extent of trade bias toward particular partners, that is, the ratio of trade relative to the trade that would be observed under a neutral assignment of trade flows across all partners.

Interdependence in Historical Perspective

The evolution of East Asian interdependence is analyzed in Table 1 and Figures 1-3. The data series represented tables begin with information collected in my earlier study (Petri, 1993) and update it from 1990 to 2004. The measures are calculated for two-way trade, that is, x_{ij} is defined as the sum of exports and imports between i and j . The surprising fact of East Asian interdependence is that the region *was* very interdependent in the past, but by the most rigorous measure, at least, its intra-regional bias declined for 50 years or more until the mid-1980s.

According to all three measures, interdependence stood at very high levels before World War II, in the context of the Japanese occupation of Korea, Taiwan and parts of China. In the immediate aftermath of World War II, trade declined sharply in most Asian economies, and thus both the absolute measure of interdependence (Figure 1) and the

Table 1. Measures of Regional Interdependence (Exports Plus Imports)

| | 1938 | 1955 | 1969 | 1979 | 1985 | 1990 | 1995 | 2000 | 2004 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Absolute measure: intratrade as a share of world trade | | | | | | | | | |
| North America | 0.030 | 0.067 | 0.069 | 0.042 | 0.064 | 0.053 | 0.522 | 0.062 | 0.052 |
| Western Europe | 0.182 | 0.196 | 0.287 | 0.293 | 0.271 | 0.338 | | | |
| East Asia | 0.100 | 0.022 | 0.029 | 0.042 | 0.064 | 0.079 | 0.126 | 0.124 | 0.139 |
| Pacific Rim | 0.180 | 0.135 | 0.169 | 0.156 | 0.248 | 0.246 | 0.305 | 0.310 | 0.284 |
| Relative measure: intratrade as a share of regional trade | | | | | | | | | |
| North America | 0.227 | 0.334 | 0.379 | 0.287 | 0.330 | 0.313 | 0.303 | 0.312 | 0.301 |
| Western Europe | 0.461 | 0.491 | 0.647 | 0.664 | 0.654 | 0.712 | | | |
| East Asia | 0.671 | 0.313 | 0.293 | 0.332 | 0.363 | 0.407 | 0.513 | 0.510 | 0.607 |
| Pacific Rim | 0.583 | 0.450 | 0.566 | 0.545 | 0.643 | 0.649 | 0.698 | 0.677 | 0.702 |
| Double-relative measure: gravity coefficients | | | | | | | | | |
| North America | 1.73 | 1.65 | 2.09 | 1.95 | 1.71 | 1.84 | 1.74 | 1.57 | 1.74 |
| Western Europe | 1.16 | 1.23 | 1.46 | 1.51 | 1.58 | 1.50 | | | |
| East Asia | 4.48 | 4.45 | 2.97 | 2.64 | 2.05 | 2.09 | 2.06 | 2.09 | 2.64 |
| Pacific Rim | 1.89 | 1.49 | 1.90 | 1.91 | 1.67 | 1.71 | 1.60 | 1.48 | 1.74 |

Source: Calculations described in text and Petri(1993).

Figure 1. East Asian Interdependence: Absolute

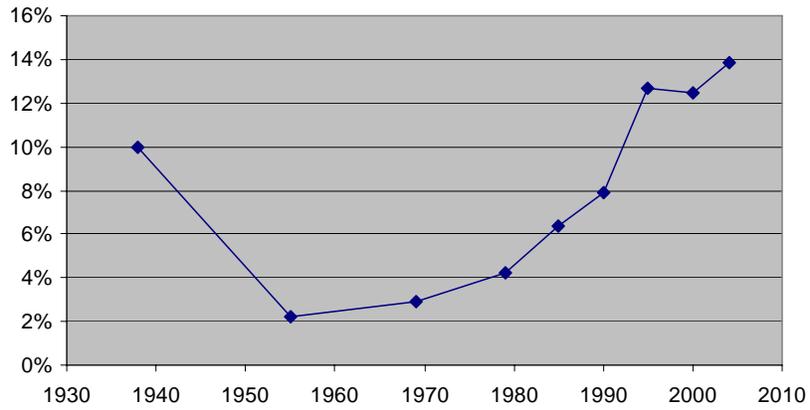


Figure 2. East Asian Interdependence: Relative

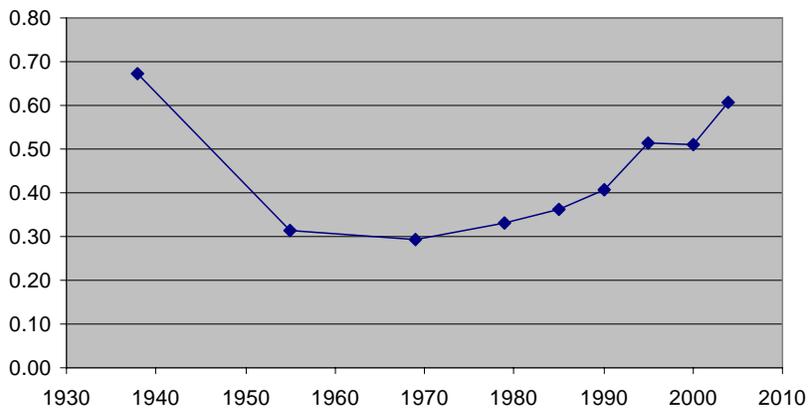
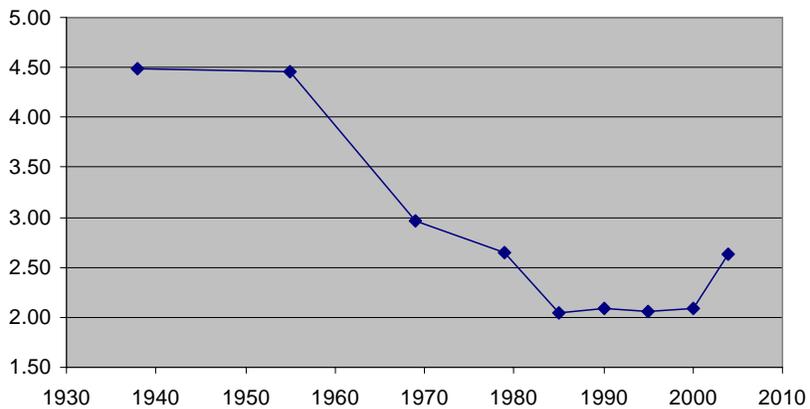


Figure 3. East Asian Interdependence: Double-Relative



relative measure (Figure 2) fell, since both are sensitive to overall trade. However, the double-relative measure (Figure 3), which isolates regional bias by controlling for changes in the overall trade levels of the partner economies, remained at very high levels even after the war.

In the decades after World War II, the *absolute* measure of East Asian interdependence recovered rapidly with the expansion of the region's overall trade (Figure 1). Indeed, since the end of the war, the share of East Asia's intra-trade in world trade has increased more than five-fold.

The *relative* measure also increased, but shows a U-shaped pattern (Figure 2). Despite expanding absolute trade, the importance of intra-regional trade initially diminished, since the region's trade with third countries grew still more rapidly. Eventually, though, East Asia's rapid economic growth caught up with the diversification of its trade, and intra-trade increased as a share of overall trade.

The most interesting story, however, emerges from the *double-relative* measure, which provides the best reflection of trade bias (Figure 3). This index shows a steady and sharp decline during most of the post-war period, lasting into the mid-1980s, indicating a decline in intra-regional bias. In my earlier paper, I noted that the decline appeared to end at that time, and speculated that the bias for the region's own products might be increasing again. The recent data have shown this to be the case. The double-relative index has turned U-shaped, with the through apparently reached in the mid-1980s. But it

is not until recently that the index began to climb with some momentum, achieving in 2004 a level not seen since 1979.

Further insight into this result can be gained by looking individually at the intensities of regional linkages for each the region's economies, as shown in Table 2 and Figures 4-6. The industrially advanced countries of the region (Figure 4) started at high levels of regional interdependence before World War II and their bias toward region declined for most of the post-war period. In the early 1980s, however, these economies appear to have renewed their regional focus, and since then their regional bias has been rising, albeit at a modest rate. The ASEAN countries (Figure 5) were weakly tied to the region at the end of World War II, but their linkages substantially strengthened in the post-war period, until about the 1970s, when their trading relationships began to turn toward global partners. These countries too, however, are now exhibiting increasing regional bias, although the changes are small and began more recently (late 1990s) than for the Japan-Korea-Taipei group. Finally, the greater China economies (Figure 6) appear to be still in the phase of diversifying their international relationships, although in China's case the trend is now level

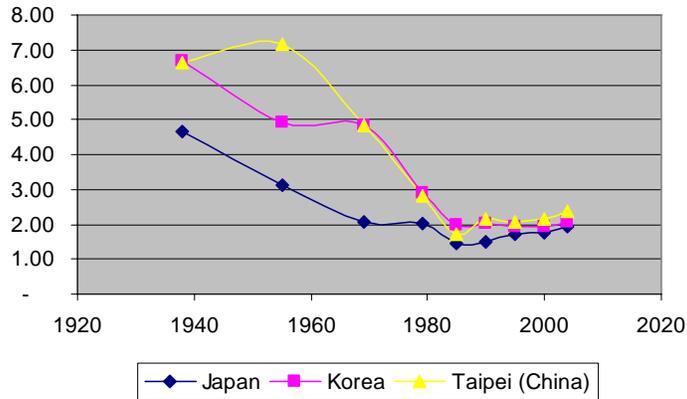
The key finding is that while the region's economies followed somewhat similar patterns of engagement with the region, their experiences differed considerably in detail. The search for explaining variations in East Asian interdependence must be able to explain these differences, as well as the timing of turning points in various countries.

Table 2. Intensity of Linkages with East Asia for Different Countries (Double-Relative Measure)

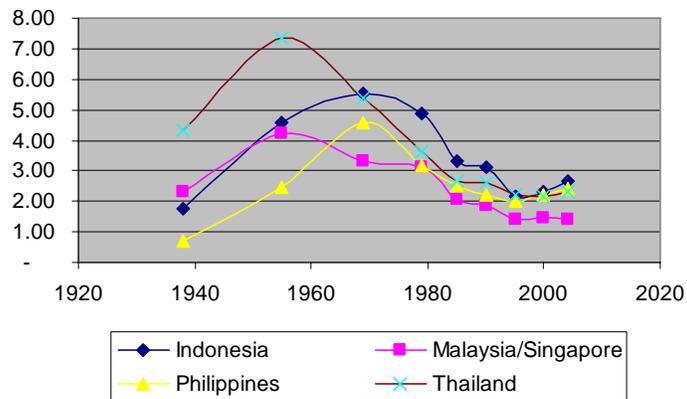
| | 1938 | 1955 | 1969 | 1979 | 1985 | 1990 | 1995 | 2000 | 2004 |
|------------------------|------|------|------|------|------|------|------|------|------|
| China | 4.70 | 6.13 | 2.91 | 2.76 | 3.23 | 3.04 | 2.44 | 2.20 | 2.16 |
| Hong Kong | 3.96 | 7.55 | 3.72 | 3.22 | 3.09 | 2.96 | 2.68 | 2.81 | 1.77 |
| Indonesia | 1.76 | 4.60 | 5.52 | 4.89 | 3.34 | 3.10 | 2.17 | 2.33 | 2.67 |
| Japan | 4.66 | 3.13 | 2.07 | 2.02 | 1.46 | 1.50 | 1.71 | 1.76 | 1.95 |
| Korea | 6.68 | 4.92 | 4.83 | 2.91 | 1.96 | 2.04 | 1.92 | 1.93 | 2.07 |
| Malaysia, Singapore | 2.31 | 4.22 | 3.34 | 3.11 | 2.05 | 1.88 | 1.43 | 1.48 | 1.40 |
| Philippines | 0.70 | 2.45 | 4.58 | 3.17 | 2.54 | 2.22 | 2.00 | 2.19 | 2.39 |
| Taipei, China | 6.63 | 7.15 | 4.83 | 2.82 | 1.72 | 2.14 | 2.06 | 2.14 | 2.36 |
| Thailand | 4.34 | 7.36 | 5.38 | 3.64 | 2.69 | 2.61 | 2.21 | 2.15 | 2.33 |
| Average East Asia | 3.97 | 5.28 | 4.13 | 3.17 | 2.45 | 2.39 | 2.07 | 2.11 | 2.12 |
| Australia, New Zealand | 0.53 | 1.35 | 2.70 | 2.85 | 2.24 | 2.11 | 1.80 | 1.81 | 1.66 |
| North America | 0.92 | 1.16 | 1.48 | 1.53 | 1.48 | 1.44 | 1.24 | 1.10 | 1.03 |

Source: Calculations described in text and Petri(1993).

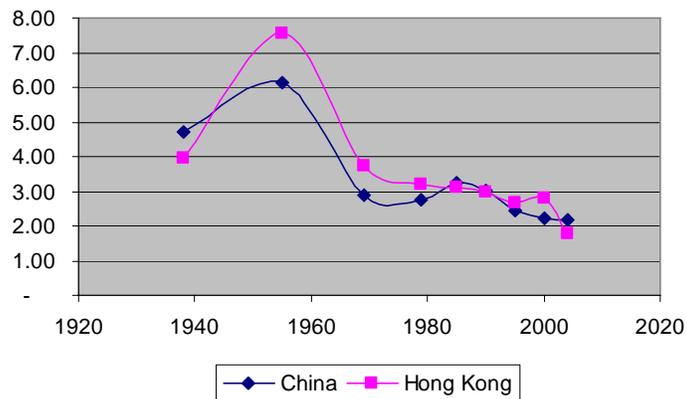
**Figure 4. East Asian Intensity:
Japan, Korea, Taipei (China)**



**Figure 5. East Asian Intensity:
ASEAN Countries**



**Figure 6. East Asian Intensity:
China and Hong Kong**



Drivers of East Asian Interdependence

As shown above, the evolution of East Asian interdependence has not been smooth at all: its intensity has risen, fallen, and in most countries is now rising again. A nuanced historical and economic analysis is needed to understand these changes. The story cannot be told in terms of the conventional international trade theory, since that theory has little to say about bilateral trade patterns—in most trade models bilateral trade is actually indeterminate. Transport costs also do not offer a sufficient explanation, since they are generally low and are dominated by fixed costs (the costs of loading and unloading) rather than costs associated with distance. It would be therefore difficult to see how transport cost changes could explain U- or sine-shaped trends in intra-regional bias. So the logic of regionalism must be sought in transactions costs much more broadly defined, including but not limited to factors such as political forces, the evolution of bilateral information stocks and business relationships, and cultural proximity as fed by language, migration and common historical experience.

In this broader analytical setting, the “Treaty Port System” imposed by the European powers on East Asia in the 19th century emerges as an important early driver of regional interdependence. To be sure, there were significant forays into intra-regional trade well before the Europeans arrived. But until the 19th century, these initiatives were contained by rulers determined to isolate their spheres of influence from foreign challenge and, for that matter, from the challenge of wealthy, domestic traders. The sustained development of interdependence had to await the arrival of outsiders strong enough to force their way into regional markets. Britain, France and the United States—and later also Russia,

Prussia, Portugal, Denmark, the Netherlands, Spain, Belgium, Italy and Japan—did that, by imposing treaties that guaranteed commercial access to key coastal cities. Their goal was trading “without molestation or restraint.”² In many cases they obtained treaties that guaranteed such access not just to themselves, but also to the other imperial powers, in a system that has come to be described as “cooperative imperialism.” The ports conducted extensive intra-regional transactions as well as trade with Europe. Because of these developments, East Asian interdependence *intensified*, and by the early 20th century some 42 percent of East Asian trade was intra-regional, a share nearly as high as it is today.

In the early 20th century, the ties developed under the Treaty Port System were reinforced by Japanese imperialism. After winning wars with China in 1895 and Russia in 1905, Japan built a powerful network of commercial contacts with Korea, Taiwan and northern China. Strong economic linkages in the occupied areas were a centerpiece of Japanese policy, and large investments were made there through the semi-public Southern Manchuria Railway Company and other vehicles. These investments, in turn, enhanced the complementarity of the occupied economies and Japan. By the late 1930s, Japan was envisioning a still wider economic blueprint for the region in a plan called the “Greater East Asia Co-prosperity Sphere.” That plan came to naught, however, as the onset of hostilities soon made the sea lanes too unsafe to permit the large-scale transport needed to implement it. Nevertheless, Japanese policies drove the intensity of East Asian intra-regional trade to its highest levels just prior to World War II.

² This was the language used in the Treaty of Nanking, concluded by Britain with China at the end of the Opium War in 1842.

In the aftermath of World War II, the political architecture of the East Asian region was dramatically transformed both by insertion of the United States as a major political and economic force in the region, and by the isolation of China from regional and world trade for more than a quarter century. These developments caused East Asia to realign its trading relationships outward, toward the United States and eventually Europe.

As her trade expanded, East Asia became a great beneficiary of the global trading system emerging under GATT and eventually the WTO. The East Asian economies, led by Japan, became the pre-eminent models of a new, export-driven development strategy. This approach rested on developing strong export markets in the United States and elsewhere, with products of increasing quality and technological sophistication. As countries progressed along this ladder by opening new, higher-end markets, others took over less sophisticated products, in what Professor Kojima (2000) so memorably called the “flying geese” development pattern. This process resulted in the rapid diversification of East Asian markets away from the region itself, and in the steady *disintegration* of the East Asian economy—that is, decline in the region’s intra-regional trade bias.

In the mid-1980s the region’s trading system has again shifted drivers. The new factors reflect partly the high level of development that the region already achieved, but even more importantly worldwide changes in technology, especially information technology. These technological changes are responsible for several new trends in the world economy, including the reacceleration of productivity growth, especially in the United States, the tilting of income distributions toward those with greater education and capital, and the

(temporary?) shift of economic leadership from countries such as Japan, that excelled in sophisticated manufacturing, to countries such as the United States, with an advantage in innovation and entrepreneurship.

The technologies of the 1990s have brought widespread restructuring to manufacturing, focusing on an increasingly fine “intra-industry” division of labor (Ng and Yeats, 2003). With more powerful means for communicating and processing information, firms can now manage more complex relationships with distant production sites and other firms, and can thus “outsource” much smaller segments of the production chain. To exploit the opportunities created by fine-grained production, firms have increased the number of countries included in production chains, assigning specific segments to countries most competitive in a narrow niche, in a process described in considerable detail by Ng and Yeats (1999).

At the same time, economies—driven by market forces as well as policy—have deepened their expertise in specialized niches. Ng and Yeats (2003) find, for example, that China’s trade has evolved in directions that facilitate segmentation of production processes. In this process, China and other East Asian countries have come to collaborate closely with—and depend on—partners following similarly narrow strategies, and not merely the advanced economies coordinating the production process. Intense intra-regional trade, along with cooperation in the communication and transport infrastructure required to implement these strategies, are the hallmarks of the new production model. In effect, the impact of the new technologies on the organization of production is now driving the

(re)intensification of East Asian interdependence, and the resulting policy interest in strengthening regional relationships.

III. Implications for Analysis and Policy

This overview of East Asian interdependence suggests that changes in the region's trading intensities are slow to change, and are related to major political or economic developments. Indeed, the forces we identified have been truly large-scale, including the exercise of imperialist military force in the 19th and early 20th centuries, the emergence of strong consumer markets and export based development strategies in the last half of the 20th century, and more recently the fine-grained cooperation in production made possible by the revolution in communications and information processing. Despite the scale and importance of these trends, their impact on regional interdependence intensities has been gradual; in other words, the biases built into bilateral trading patterns are clearly robust, and give way only slowly to only very powerful forces.

As we already argued, there are potential benefits from building closer economic ties to a rapidly growing region, so managing interdependence will be attractive to governments. But before this concept can be translated into policy, we will need to know much more about the channels by which economic and political action—those identified here and others—impacts regional interdependence. In the historical era, for example, transactions initiated by government (say, the order of supplies for military activities abroad) caused agents involved in those transactions to create capital (perhaps acquire local facilities,

transportation channels, or just information about how transactions in that country are conducted) that made subsequent transactions cheaper or easier.

In today's context, regional trade agreements that stimulate bilateral transactions within or with East Asia could have similar effects, promising dynamic benefits in excess of those associated with the static gains from trade. The glacial response of interdependence to economic trends suggests that there are long-lived, yet changeable factors that govern the bilateral or regional commercial ties of economic agents. But on the whole, we know little about the character or size of the subsidiary investments made by economic agents, or about the role that such investments might play in "setting in place" bilateral or regional ties. Knowing more about these linkages would be important in assessing the value of building bilateral or regional partnerships (that is, beyond just the direct benefits of an intervention such as trade liberalization).

The foregoing suggests three policy observations which pull in different directions. The first observation cautions against intervention. Experience suggests that change in bilateral and regional biases is very slow—we have seen, for example, that the intensity of regional relationships was barely affected by events as large as World War II and the collapse of the region's economies thereafter, and only gradually came to reflect the new alignment of global political and economic forces. The role of policy in such an inertial context is very limited. The effort to divert regional relationships from whatever trends may be driving them—if it is to be attempted at all—needs to be large and sustained. One needs to think in terms of the commitment and scale of the European community

project (largely undertaken for non-economic objectives) and its gradual effect on European economic integration. As a counterexample, the APEC project, arguably, has had little effect on the linkages of the two sides of the Pacific, and most likely won't affect the in the future either, unless a new and more successful model of collaboration is found for the institution.

The second observation, arguing for potential intervention, is that government actions have had major effects on regional partnerships, precisely because the economic logic of trade (as captured in basic trade models) is silent on bilateral trade relationships. A given trade equilibrium may be consistent with any of several regional trading patterns. In this context, government(s) may be able to tilt the commercial playing field toward certain favored trading patterns, as Japan did in the middle of the 20th century, and more recently Europe and NAFTA have done in recent decades. As noted, such goals have to be pursued over long periods of time with measures bold enough to overcome considerable inertia.

A third observation concerns the implications of the new, technological drivers of regional integration. It is likely that the forces propelling regional integration have become, at least for the time being, more deeply rooted in economics. If the logic of interdependence today is based, as we argued, on a fine grained division of labor, then there are now stronger economic reasons for particular bilateral and regional trade patterns than there used to be, when economies were more vertically integrated. This is because coordination of fine production steps inherently requires more cooperation,

making economic proximity³ itself an important ingredient of the production process. If regional trade is the efficient way to generate products based on a fine division of labor, and importance of fine-grained production processes is growing, then regional trade will increase not just in East Asia, but also in other regions with sufficient scale (which may turn out to be only large regions for some industries). Under this argument, the policy management of regional linkages will become more difficult.

IV. Conclusions

This paper has reviewed the evolution of the intensity of interdependence in East Asia. In earlier work (Petri, 1993), we found that East Asian interdependence, as measured by a gravity-coefficient index, peaked before World War II and then declined until the mid-1980s. We speculated then that the decline would end, leading to a new era of East Asian regional integration. In the event, data extended to 2004 show that the 1980s did represent a turning point, and interdependence has increased since for most countries and also on average.

In tracing possible explanations for this pattern, we found the drivers of East Asian interdependence to change over time. They were primarily political and inward oriented during the region's initial wave of integration in the pre-war period, and then became economic and outward oriented after World War II, as East Asia pursued a trade-based growth strategy. Today, integration is driven by technological changes that favor a finer division of labor and put a premium on coordination and economic proximity.

³ Economic proximity does not necessarily mean geographical proximity; for example, language and compatible education systems play an important role in linking US and Indian service producers.

Should countries or regions—and East Asia in particular—manage regional integration? Given the dynamism and growth opportunities of the East Asian region, there are good reasons for countries in the region, and for that matter elsewhere, to hitch their wagons to the East Asian star. History suggests that trade relations can be managed, but the challenges are great and many efforts fail. Regional trading agreements, for example, have to be built on a large scale, and the effort to deepen and strengthen them must be sustained over a long time periods. Important non-economic objectives have generally played a critical role in ensuring that the political will remains in place over the timeframe required for meaningful results.

We have also argued that the value of region-building may be gaining value in today's technological environment. In "old" trade relationships (that is, in a world of less finely-grained production specialization), the gains from trade came from a country's factor endowments. Bilateral or regional trade patterns were theoretically indeterminate, explained by incidental variables such as transport costs or differential protection. But in "new" trade relationships (in a world of specialization in narrow production steps), the gains from trade derive from a country's ability to collaborate with the right partners, that is, from the communications and transport infrastructure that connect countries smoothly for purposes of "production sharing." In this context regional integration becomes a central variable in maximizing gains from trade and an important objective of policy.

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