

1 The Potential for Economic Integration in Northeast Asia

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The purpose of this paper is to begin consideration of the possibilities for greater regional economic integration in Northeast Asia. Perhaps fortunately, what can be said with confidence is limited by the lack of detailed data on several of the regional economies. However, it is possible to establish in broad terms the existing relative factor proportions in the region and what would be expected to happen if barriers to trade and factor movements were removed. Similarly, the resulting comparative advantage of the region in world markets can be suggested with some confidence. Of course, the major constraints faced in achieving regional economic integration are political. I will generally proceed on the assumption that the political problems can and will be solved.

Leaving out Japan, the Northeast Asia being considered is contiguous, covering South Korea, North Korea, Mongolia and portions of China and the USSR, Northeast China¹ and the Soviet Far East.² It is difficult to envision Japan as a full-fledged member of any regional economic integration scheme, so I will emphasize the mainland portion of the region. Nevertheless, Japan's role as a regional banker, source of technology, and important market will often come into play.

BACKGROUND

The Northeast Asian region as defined had about 290 million people in 1986,³ copious natural resources, large amounts of capital and technical know-how in the more developed portion of the region, and the beginnings of high-level human capital accumulation in the less developed portion. With Japan included, the region's GDP is \$1,482 billion or approximately 60 percent of the EEC's. Without Japan, which has the largest population and accounts for about 90 percent of the regional GDP,⁴ the region has a population of about 169 million and a total GDP of close to \$154 billion, or approximately 75 percent of the combined GDP of the ASEAN countries and about 67 percent of China's GDP without Northeast China and with only 18 percent of China's population.⁵

With a different history—for example, as one country—the continental part of the region might have become one of the world's major economic powers, which is to say there is much untapped potential. But, apart from South Korea, the less developed Northeast Asian areas are not now near to tapping this potential. Missing are adequate technology and most basic infrastructure, at least in competitive modern terms, including transportation and ports, communications of all kinds, financial services, reliable energy supplies, and stable institutions. Also missing are the economic and political arrangements that would enable the realization of the existing potential for greater economic development than any one country in the region could achieve alone.²

In brief, Northeast China, the DPRK, the Soviet Far East, and Mongolia present an economic frontier waiting for a suitable group of pioneers. They badly need capital, especially physical capital, and modern technology. Japan and South Korea have both but lack natural resources and labor—so synergy is possible but not inevitable. The basis for expecting a positive outcome from increased regional integration is the potential for greater regional specialization based on market size, differences in natural resources and human and physical capital endowments, and differences in demographic profiles and in the stages of development so far attained. The opportunities involved are largely unexploited since in recent decades, because of political barriers and incompatible ideologies, the level of economic cooperation and interaction across national boundaries within the region has been extremely low. This can be especially seen in the very minimal development of the regional transportation and communication networks, which were originally designed to service Japan and European Russia and not the intraregional trade of Northeast Asia. Many of the factors that prevented cooperation in the past have been disappearing, however, especially the ideological differences, and a more pragmatic approach has been developing, setting the stage for investigation of the possible dynamic benefits of greater integration of the region's economies.

REGIONAL INTEGRATION: WHAT IS IT?

Regional integration and cooperation can mean any one of a number of possible arrangements. Thus, to proceed, we must explain exactly what we will be discussing. That is, will regional cooperation in Northeast Asia involve a currency union? Free factor movements? Common tariff? Free trade zone? Multinational joint ventures? Obviously, the goal of economic integration enters into this decision. For example, is the goal to increase specialization and hence growth within the region as well as between the region and the rest of the world, or is it just the latter? Are linkages to basic manufacturing industries in the region to be part of the scheme, or are we talking mostly about the final fabrication of goods made outside the region?

With parts of two countries involved in the overall region, broader forms of integration, such as an economic union along the lines of the EEC or a customs union, seem out of the question. Perhaps the maximum that can

reasonably be expected would be a free trade or preferential tariff zone covering the region and the minimum an accepted set of rules for the movement of capital, services, and contract labor regionwide, usually on a project basis, perhaps with some provision for negotiating preferential treatment in regional markets for the end products of these movements.¹

Most discussions suggest that Northeast Asian integration means setting up ways to facilitate the flow of capital from South Korea and Japan to developing Northeast Asia and the return flow of goods to South Korea and Japan and through them—or under their auspices—to the rest of the world. This could be restricted to one product in one industry or be as broad in concept as a free trade zone. Basically, the hope is that the manufacturing, fabrication, or assembly that supported will generate much needed foreign exchange as well as the transfer of technology and gains from "learning by doing." The repatriation—if desired—of profits back to South Korea and Japan is the other side of the coin.

Apart from the fact that concentrating on joint ventures to supply the rapidly changing Japanese market or equally rapidly changing structure of South Korea's exports is likely to fall behind the changes and hence have a high risk of failure, this somewhat limited version of integration does not explain why Japan, or South Korea, would select the rest of the Northeast Asian region as a partner. They can go worldwide for this purpose and will only take the best return obtainable. Either costly "incentives" or access to the Northeast Asian market itself seem necessary to get the attention of Japan and South Korea. Thus, it seems to me, successful regional integration depends on there being some guarantee that, whatever the initial stage of any integration scheme is like, it will ultimately involve increased access to the domestic markets of Northeast China, the DPRK, the Soviet Far East, and Mongolia.

Although a more restricted approach to regional cooperation—such as envisioned in multinational joint ventures or a multinational economic processing zone—may be politically more palatable, I have opted to take a broader approach and look at Northeast Asian economic integration in terms of intraregional as well as interregional specialization. The reason is that such unrestricted integration promises far more long-run economic benefits and would be far more attractive to outside capital—either from the developed part of the Northeast Asian region or from elsewhere.

A problem, alluded to above, with any assumed level of integration is that in Northeast Asia, as defined, parts of countries are involved. Thus the exchange rate that would, say, keep the ruble in line with national policy goals may not work at all for the Soviet Far East as a participant in a Northeast Asian regional grouping. Or the monetary policy that works for China as a whole may be too restrictive or too expansionary for Northeast China in relation to its partners in a Northeast Asian regional grouping. It is difficult enough for groupings of nations to meet the criteria of similarity of movement in prices and aggregate demand necessary for the success of almost any level of real

economic cooperation, much less a grouping of nations and parts of nations. Similar problems can arise if fiscal policies and incentives (or the rules of the economic game) differ markedly between members of a regional grouping.

Another issue that arises either when tariffs against outsiders differ across a free trade area or when parts of nations operate under different rules than the rest is nonproductive arbitrage. That is, goods are imported into the country with the lowest barriers in the integration scheme and sold to the country with the highest barriers and prices, even at higher transportation costs. It is easy to disguise such imports and difficult to trace them. Thus transportation costs, "disguising" costs, and the enforcement expenses required to monitor all this are incurred but would not be incurred without regional integration.⁸ Then there is the problem of the fungibility of financial capital. With the countries of Northeast Asia having widely differing interest rates and access to capital, there would be a direct advantage in borrowing under the integration scheme and then finding a way—they are legion—to relend the funds involved profitably elsewhere in the region (such as borrowing to import basic materials into a free trade zone in Northeast Asia from, say, Shanghai, and over-invoicing to, in effect, make a loan to the Shanghai supplier). Given the command economies involved in all but South Korea and Japan, the many such price distortions resulting would offer numerous opportunities for arbitrage as some parts or sectors liberalize and become market-guided, as must happen for economic growth to ensue from regional cooperation.

Regional countries (China, South Korea) that have free trade zones in place have already come up against these problems and have presumably found ways of preventing such rent-seeking activities from getting out of hand, without losing all the benefits. To fall back on price setting, quantity restrictions, and reporting of all activities to control arbitrage would also greatly reduce the expected benefits of economic integration. Essentially, some degree of rent seeking will have to be tolerated. The trick is to see that rent seeking does not become the major thrust of economic integration.

Another problem that is often ignored in looking at the positive side of greater economic integration is that, if successful, integration must involve structural adjustment. Intra-regional competition for some goods or services will increase if intra-regional trade expands. If new capital comes in and attracts labor and other resources, existing producers must face the resulting rise in resource costs, via prices or some state-run allocation mechanism. If successful integration raises exports more than imports (with Japan and South Korea in the group, this is likely since many of the capital goods needed will come from Japan and South Korea but the end products are likely to go outside the region), then the resulting real appreciation of regional currencies will penalize any exporters not keeping up with integration-supported increases in productivity (traditional export industries, handicrafts, and the like). The point is: There will be losers as well as gainers from increased regional cooperation, and it is best to recognize that possibility up front and be prepared to deal with it.

For all existing regional integration groupings, whatever the purpose of the arrangement, there has always been a question of how fast to go with the implementation of changes implicit in the integration. ASEAN has, for example, moved very slowly on the economic front—even the long-discussed regional industrial complementation projects are mostly still on the drawing boards and there is nothing close to a multinational free trade zone in the region. I will leave such "timing" issues to others and concentrate here on the possible effects of a truly substantive move toward integration. An intuitive assessment of the possible gains in terms of faster regional per capita economic growth suggests they could be enormous.

Finally, there is the common problem of the distribution of the expected benefits between the partners in the regional grouping. Usually, in my experience, it is not enough that all gain; rather all must gain equally or at least be perceived to gain roughly equally. This may be less important for Japan where a major incentive for participation would be the profitability of regional integration for Japanese business. South Korea would also find this profitability incentive important, though the long-run security of the state would also be involved. The DPRK is, on the other hand, driven by the goals of its leaders and is likely to cooperate only if its benefits seem equal to those of other participants, especially South Korea. While Northeast China and the Soviet Far East might well be happy if their growth rate takes a noticeable jump upward, even if others seem to gain more, Moscow and Beijing may not like the precedent thus set. Only Mongolia might be willing to settle for less in measurable economic terms since much of the benefit to that country would come from greater access to ocean transportation and more diversification of markets.

For all these reasons, regional integration may require pilot projects or a highly restricted economic zone, such as the Tumen River Project,² to focus the effort and overcome the inertia arising from prior knowledge of so many problems. Although the pilot projects must be accompanied by the changes discussed below to have any long-run effect, they may be necessary in the political process for their demonstration effect.

Before looking at the issues surrounding such pilot projects, I wish to concentrate on the gains to be made along the broader lines of a Northeast Asia free trade zone. Essentially, effective economic integration entails real reforms—in fact, brings them about. There are costs in the structural adjustments required, and loss of rent to the officialdom prospering from previous inefficiencies, but the gains can be very large. With this background, the following four premises will underpin this paper's introductory analysis of regional integration in Northeast Asia:

- Premise One: There will be a substantial reduction in trade barriers between the countries and parts of countries in Northeast Asia, moving substantively toward a free trade zone.
- Premise Two: Capital will be free to move and find a similar legal environ-

ment in all parts of the region, but labor will only move on a limited contract basis.

- **Premise Three:** The transportation and communication infrastructure needed to facilitate the first two premises will be provided. (It is not these new transportation runs to seacoasts or to distant markets, not between the urban production centers of Northeast Asia.)
- **Premise Four:** Without specifying how, rules will be adopted that make arbitrage unattractive—either between the included and excluded parts of the former Soviet Union and China or between the members with differing external barriers or internal incentives.

THE SOURCES OF GROWTH: A BRIEF REVIEW

As background for the discussion of how greater international economic cooperation could lead to increased per capita income, it will be useful to set out a typology of the sources of growth and to discuss how each might be related to regional integration of the sort we are assuming.

Source 1: More human and physical capital of the same kind per worker. With integration, there would be a regional increase in capital per worker (1) if savings are increased by the greater opportunities for profitably using savings either in acquiring human capital, financial assets, or productive capital or (2) if brighter prospects for trade within the region encourage flows of capital to the region from outside,¹⁸ either because integration reduces production costs and hence improves the region's competitiveness in world markets or because regional barriers to trade are reduced. There are obvious cross-products here with improved economic organization and the provision of needed intra-regional infrastructure.

Three other comments are relevant. First, the poorer countries in the Northeast Asian region can achieve greater capital per worker via economic integration even if no new capital is generated inside or from outside the region. This will happen if integration facilitates the flow of the region's existing capital to the highest returns available—which, *ceteris paribus*, will be where capital is now relatively scarce. This *ceteris paribus* is of course a very big assumption given the present conditions in the command economies of the region. Second, it is the improvement in regional trade prospects via integration that is the prime stimulus to capital accumulation. Except for the instances in which necessary inputs can be combined more cheaply with integration, most opportunities for attracting external capital to production for exports outside the Northeast Asian region would exist without regional integration. If other things were right, they would be taken up anyway. Third, integration raises the skill requirements needed to be competitive and hence raises the returns to acquiring skills. Thus, effective integration encourages increases in the supply of human capital in response to increased demand.

Source 2: Changes in human and physical capital (technical progress) that increase output per worker. For the less developed countries, in Northeast Asia and elsewhere, this means acquiring existing skills and equipment that are advanced over the skills and equipment in place locally. For the most developed countries such as Japan, this means pushing outward the frontiers of knowledge. For those in the middle, as are the Asian NICS, both sources of change are important.

Integration that attracts outside capital, or makes the domestic acquisition of outside capital more profitable, facilitates catching up. In Northeast Asia this would be closely associated with the growth in intraregional trade and the new opportunities provided by a regionwide reduction in constraints and distortions. Real integration involves the removal of at least some constraints and an increase in trade, which in itself brings greater exchange of ideas and know-how. On this score, the more a regional grouping can integrate into the world economy, the greater the learning and technological transfer—though in Northeast Asia any close involvement with Japan should bring this externality.

Source 3: Greater specialization, taking advantage of comparative advantage between individuals, between regions within the country, and between the country and the rest of the world. This is, of course, one of the main sources of growth and one of the main justifications for greater integration. It is the justification for the EEC and a major source of the high per capita income in the United States and Japan. Although, conceptually, the same results can be achieved by free trade, having a common political identity or allegiance to a regional agreement tends to make the reduction of barriers between the included countries or geographic regions more acceptable. Jingoistic arguments do not disappear but are more difficult to sell.

Economic integration by encouraging greater specialization within a region can increase income in two ways: first, by the effects of reducing barriers of all kinds to trade; second, by facilitating the movement of factors of production toward higher-return uses. The former may involve either trade diversion or creation, or both simultaneously, but it will involve a net gain for the region. The second, since it uses less of the world's resources to produce the same output, must raise both regional and world incomes.

Source 4: Economies of scale derived from expansion in a given productive activity domestically or internationally. Conceptually, a country or region can attain whatever economies of scale are available simply by becoming a player in world markets. The role of integration is to reduce uncertainty and give "guaranteed" access to a market large enough—if integration does that—to make taking the risk of the long gestation and product establishment periods often associated with attainment of scale economies worthwhile. In fact, it was the attainment of economies of scale under highly competitive conditions—many beginning players failed—within the Japanese domestic market that made Japan internationally competitive in many lines. This "infant industry" argu-

ment could be used to support Northeast Asian integration as well—as long as the other key conditions (such as sufficient competition to get costs to a minimum and marketing skills to a maximum) are met and the region does not get stuck in the import substitution phase.

Source 3: Better economic organization, internal and external to the producing units, increasing the efficiency of economic production. Such organization would include the ability to spot and take advantage of new products (at least new to the country) that will increase value added, improved intra-firm management and resource utilization, greater responsiveness and adaptability of resources (including improved information), and savings generated by better arrangements between producing units. This is probably the major untapped source of economic growth in Northeast China, the Soviet Far East, and the DPRK. It also remains important in South Korea. A full discussion of the reforms required, their nature and timing, could fill several books and will largely be based on conjecture. However, the free trade and accompanying competition resulting from regionwide integration will make reforms necessary and point them, in evolutionary fashion, in the right direction. Of course, the costs associated with such reforms and that have prevented real reforms to this date would still be there. Perhaps it may be easier to approach accepting them through the back door of responding to the needs of regional integration rather than via frontal attack. But I do not think so.

In any case, the possible contribution of regionwide economic integration to large movements toward the relevant production possibilities curve, compared to the minimal changes coming from the piecemeal project approach, is a strong reason for favoring the former. The project approach has no major externalities, it tends to reduce adjustment flexibility (and can create "white elephants"), and it does little to foster the local supply of entrepreneurship.

Source 4: Time and the experience gained by learning from doing. This obviously goes to the doom. Integration by increasing the amount of economic activity would increase growth from this source—which has a direct cross-product with improved technology and is a way of improving human capital.

Source 5: Change in market power leading to resource reallocations that raise domestic value added. This is another way of saying that increased competition, which reduces entrenched monopoly power, increases economic efficiency and measured real output. The relation to integration schemes that increase exposure of current holders of monopoly power (state enterprises, the Chaebol) to greater competition is clear.

Source 6: Better international and domestic terms of trade resulting from world and domestic changes in costs (improving value added per worker or more) (improvements in the terms of trade resulting from the exercise of monopoly or price-setting power. Apart from the predictable effects of population changes and ongoing adjustments to known technology, there is little a priori basis for determining where the terms of trade will move. This is even more difficult since what counts is not the nominal but the real or factorial

terms of trade (which, for example, look much better for primary products than do nominal terms of trade).¹⁰ What integration would bring is greater likelihood that the larger Northeast Asian region would have some balancing of the effects of shifts in demand or supply conditions and greater experience with structural adjustments and hence adaptability to such changes. As for the exercise of monopoly power, that requires ability to affect world prices for a product long enough to gain a lasting increase in income, which does not seem likely for any products produced in Northeast Asia—they all have relatively close substitutes in the long run.

SOME CONCLUSIONS ABOUT REGIONAL INTEGRATION

Clearly there are lots of possible gains from regional economic integration. Perhaps the most important is the stimulus to change that would result from the removal of constraints now in place. At least four and possibly five of the six countries or regions included in the Northeast Asian grouping have room for much improvement. A key question is why they have chosen to maintain a set of policies constraining growth.

Many of the sources of growth discussed here involve catching up. The opportunities are there wherever a nation is far below its production possibilities curve or its human and physical capital/labor ratios can be increased at returns above the world average. But the catching-up argument clearly applies equally well to all developing countries. All being far behind in both human and physical capital per worker and in technical knowledge, and all generally having numerous opportunities for increased specialization and improved economic organization, all generally have a lot of catching up to do. Thus they have the opportunity for higher rates of per capita economic growth than do the developed countries on the cutting edge.

By now there is a reasonable consensus that a competitive environment within a framework of accepted and enforced rules of the game is the *sine qua non* of successful and sustainable growth. It also appears that outward-looking trade policies make it impossible to avoid creating such an environment for a substantial part of a nation's productive capacity. Even if a country allows one firm or one ministry to monopolize the export of a particular commodity, that firm or ministry will face numerous competitors in world markets and will have to produce efficiently or be a continual and unsustainable drain on the country's resources.¹¹

Finally, better macro policies (fiscal constraints, positive real interest rates, reasonable certainty about the inflation rate, and, possibly, a relatively low inflation rate) are to be found in all success stories. Also important are a competitive exchange rate and a set of monetary policies that (as a separate benefit) encourages financial savings. Thus one criterion for judging prospects in Northeast Asia is whether cooperation is likely to push the countries to adopt the

policies cited here or keep them from doing so. Effectively, choosing greater openness is the key because the other policies that are historically or empirically important for growth are "forced" on a country that opts for greater openness. Since real integration involves increased openness, at least within the region, it is undoubtedly a positive step. Since the basic policies that have led to growth are open to all but not adopted by all, to understand what has or has not happened it is necessary to consider the circumstances that generate the political ability or desire to take on openness or economic integration. As this is a topic that would take us considerably beyond the boundaries of this paper, I will leave it here with a partial list of the conditions that facilitate taking the required policy steps and refer the reader to the appendix for greater detail.

The key conditions contributing to adoption of the necessary open economy and related economic policies include: the lack of resources and internal markets permitting even minimal internally led growth, adequate infrastructure and sufficient human capital in place so that positive results come relatively quickly (and grow in pace with industrial growth), and a lack of vested interests that have both political power and a stake in opposing the changes that would lead to growth. They may also include a homogeneous population and a culture that allows a political consensus. Several of these conditions were involved in the growth success of Japan and South Korea. Their general absence from the rest of the region may account for the lack of growth there and explain why the policies that yield growth and real integration may be difficult to achieve.

In sum, if barriers to intraregional capital and trade flows are eliminated—which could be facilitated by regional cooperation, so that the less developed parts of the region get the necessary capital for infrastructure and industrialization and open intraregional trading ensues—it is difficult to see how Northeast Asia can fail to get rapid economic growth. This will come from a variety of sources, including increased capital/labor ratios, technological transfer and catching up, increased specialization from trade (gains from trade), dynamic effects of capital flows, more efficiency in production from more competition, and economies of scale from larger markets.

AN EXAMPLE OF RESTRICTED INTEGRATION: THE TUMEN RIVER PROJECT

Basically, the Tumen River Project involves the construction of port and communications facilities and the establishment of an economic processing or free trade zone near the mouth of the Tumen River. Inputs of materials and partly processed goods bypassing normal tariff constraints or quotas would come into Northeast China from the Soviet Far East, the DPRK, and Mongolia. Similar inputs and goods would come from the surrounding provinces of Northeast China. Basic labor would come from Northeast China and the DPRK. Tech-

ically skilled labor would come from all of the above plus Japan and South Korea. Management would come from Japan and South Korea or from outside the region, as would the necessary capital and more sophisticated equipment.

This is essentially the minimal scenario set out above and involves each country party to the project contributing some resource. It must be assumed that either existing constraints are relaxed or existing distortions are removed by the agreed upon integration, making a previously unattractive project attractive to whichever country or countries contribute the financial capital—the one resource with worldwide opportunity costs—or that the other countries involved take steps to lower the “costs” of putting the project together. These can range from smoothing the bureaucratic path (with credible promises to continue this smoothing as the inevitable problems arise) or direct incentives such as tax holidays. Actually, there must be many such projects possible in a free trade or economic processing zone, given the constraints and distortions that now exist in Northeast China, the Soviet Far East, Mongolia, and the DPRK.

Generally, if project-specific “constraint and/or distortion removal” offers some previously unavailable advantage to outside capital, the resulting projects would have to be directed to markets outside China, the USSR, Mongolia, and the DPRK since constraints and distortions would still exist in the rest of these economies. This means that the projects would be intended to supply the South Korean and Japanese markets or, even more likely, the world market. A problem is that the viability of such projects depends on removal of constraints or correction of past mistakes rather than unfettered comparative advantage. The result may be a project that would not occur if liberalization and reform were more generally applied and hence a project with suspect long-run linkages. In any event, they would not, as would more broadly based integration, bring conditions raising the economy-wide level of efficiency.

An example of this approach in the Yumen River Project might be an integrated metal or mineral processing operation, say for export to the Japanese market, and using, as suggested above, Soviet Far East or Mongolian metals or minerals,¹¹ Northeast Chinese and DPRK labor, and South Korean and Japanese capital and equipment and management skills. Supportive infrastructure would have to come from the governments of China, the former Soviet Union, and the DPRK. For China, Asian Development Bank or World Bank funds could be sought; for the DPRK or the USSR, government-to-government loans from Japan would seem the only possibility.

Assuming that the necessary funds are available, the Soviet Far East or Mongolia would have some of their natural resources used along comparative advantage lines that otherwise might have remained in the ground and, possibly, some transfer of technology. But, unless providing some of the technically skilled labor inputs required, the Soviet Far East would get few secondary benefits and a relatively small share of the project's value added. However,

the Soviet Far East along with Mongolia and the DPRK would benefit from any Japanese subsidization of infrastructure loans. China and the DPRK would have the productivity of their workers increased and get the workers' share and the land share of the resulting increase in value added. They would also get whatever taxes are relevant and the training effects and a major share of the secondary ripple effects of the increased employment and wage bill.

Of course, the project-related increase in labor productivity could be "second or third best," since even greater increases might have been obtained—not necessarily in the metal or mineral processing sector—with more universal removal of current constraints. In fact, though less expensive labor is an important element, projects of the sort being described often have a much higher capital intensity than local conditions warrant and hence are not as viable if reform gets prices closer to reflecting opportunity costs in the economy generally. This possibility seems extremely likely in the less developed Northeast Asian countries and should be a concern of all involved in any Tumen River projects.

Finally, if success in the metal processing project leads to the development of plants producing the processing equipment, then further gains to the countries involved—but especially China, the Soviet Far East, and the DPRK—would be forthcoming. And, given that since 1945, for political and technical reasons, China has not used the Tumen River to gain access to the Sea of Japan, although the right to use the river is specified in the 1895 Beijing treaty, the planned project could involve significant reductions in transportation costs as well as increases in economic specialization for Northeast China. Similarly, Mongolia would gain access to an internationally controlled port.

South Korea and Japan would get the rest of the value added directly associated with the project, the interest or profit share, and a market for their machinery and equipment—both in the infrastructure component and in the processing component of the project. Presumably these countries would also obtain a less expensive source of fabricated or processed metals or minerals. In addition to the general benefits from economic integration in Northeast Asia as a whole, South Korea has a strong interest in cultivating mutually beneficial interactions with the ethnic Koreans of China's Yanbian Autonomous Region in the lower Tumen basin. For Japan, as the existing dynamic changes unfold, this project could have a major positive impact on the development of Japan's western coastal provinces and longer-run payoffs for the country as a whole.

The bottom line for all concerned is whether or not the new plants would come up with output at some price advantage over current supplies available worldwide. If that does not happen and there are many possible problems, including exchange rate movements, that might negate any expected advantage, then someone is going to have to subsidize the new operation. In the absence of general reforms in the command economies involved, any new plant and employment created in the Tumen free trade zone is likely to be kept in operation whether it is profitable or not. Soft budget constraints are the rule. If this happens, the attempt at integration will backfire.

To justify the use of the resources of all participants, over and above the political component in the capital supplied by Japan and South Korea, the project is going to have to move everyone—but especially the DPRK, Soviet Far East, Mongolia, and Northeast China—closer to their production possibility curves. The main gains are going to come from increased efficiency and from the dynamic effects of the technology transfer and learning from doing. All of these gains could result from economic reform without regional cooperation. The reason for regional “integration” of this sort would then be that it offers a politically acceptable route toward (very partial) reform.

RESEARCH ISSUES

Assuming that minimal infrastructure needs will be met, there remain three very important and related general questions. First, without barriers to trade and capital movements how would economic production and specialization evolve in Northeast Asia? Second, what would be the likely comparative advantage (ignoring national boundaries) of this integrated region in world markets, both initially and in the long run? (For example, will trade creation or trade diversion dominate?) Third, what incentives not present now will result from integration to encourage the movement of capital and labor to and within the region? That is, why would those having the capital, either in or out of the region, invest their industrial capital in this region as opposed to others? Except possibly for Japan’s west coast, expected returns are the key and lead to some difficult questions.

In terms of attracting capital, showing potential complementarity is not enough. Private international capital looks for infrastructure, labor with requisite skills at relatively lower cost than elsewhere, natural resources, stable institutions (especially those covering rules of the game, which involve political stability and ownership rights), currency convertibility, and low bureaucratic drag. Not is complementarity enough to guarantee that any capital raised will be well used—will raise social stability. Efficiency in resource allocation is not a strong point of several of the economies involved.

There are also many detailed technical questions about the implementation of regional cooperation that should at least be posed if not answered. Most have been raised earlier but bear repeating. Together, they provide an important further research agenda. In China and the USSR, for example, how can the regional exchange rate be divorced from the national rate, which may be much different than needed regionally? Or what provisions will be made for structural adjustment, especially in Northeast China and in the DPRK, as development leads to substitution of production along the lines of the comparative advantage established by cooperation for the existing, less efficient production? And who will gain (and by how much) regionally from improved production—from better use of resources? This question, too, needs to be investigated.

These above issues need answering whether the regional integration considered is narrowly or broadly conceived. If the focus is on specific projects, however, many other studies would be needed. There must be emphasis on the prospective economic rate of return for all projects to be implemented, not just from the standpoint of possible private investors but also from that of the countries (and regions of countries) involved. If funds are sought from the major international lenders, the Asian Development Bank or World Bank, this will become not only desirable but necessary. And, in today's world, unless the intent is to finance the whole development internally, the environmental effects of each project contemplated will have to be evaluated and included in estimating the net benefits of the project.

If the Tumen River Project is specifically considered, there is the issue of what development of the Tumen basin and port facilities would contribute to the general gains from regional cooperation. That is, what are the expected marginal gains or net benefits from development of the Tumen basin, as opposed, say, to development of other areas or river basins in Northeast Asia or to shipping through Dairen and hence shipping via the Yellow Sea as opposed to shipping through the Japan Sea? Or from cooperation as opposed to going it alone for the USSR and for DPRK? Or from a port on the Tumen versus a superhighway to the main port of the DPRK?¹⁴

BASIC REGIONAL FACTS

To give some substance to the discussion of Northeast Asian regional cooperation and to begin to answer the questions raised about Northeast Asia's potential comparative advantage, it will be useful to look at some facts about the region. Table 1.1 gives the region's population, the areas of the countries involved, and the population densities of both the countries and parts of countries involved (greatly "guessed" for the parts of countries). The table also gives estimates of GNP or GDP and per capita GNP for the region. The data are mostly for 1985 for reasons of comparability between the several sources used. The relative positions shown are probably fairly close to correct, but the absolute levels could be 10 to 20 percent off.

Looking at total population, there are some large differences in size, ranging from Japan's 121 million to Mongolia's 2 million. Northeast China, with 98 million people, is the second largest population involved. Even without Japan, the contiguous mainland portion of the region has a market size—188 million, about 70 percent of the United States—that, in population terms, would make preferential entry very desirable. It is clearly large enough to be the basis for regional integration to obtain economies of scale for mass-produced low-cost consumer goods, the equipment to produce them, and the materials they will use.

The Soviet portion of the region represents a very large landmass and one rich in mineral and forest resources. Mongolia, too, covers a relatively large

Table 1.1 Northeast Asia general economic data: 1985

	GDP (billion\$)	GDP per capita	Population (million)	Area (1,000 km ²)	km ² / 1,000 popu- lation
Northeast China ^a	11.9	331	96.3	956	9.9
North Korea	11.1	1,034	10.4	121	5.9
Soviet Far East ^b	15.4	2,000	7.7	6,215	803.1
Mongolia	1.6	780	2.0	1,565	782.5
South Korea	86.2	2,097	41.1	98	3.4
Japan	1,327.9	16,990	126.8	372	3.1
Total less Japan	134.6	923	167.5	8,533	51.3
Total	1,462.5	3,178	286.3	9,327	32.6
USA	3,946.6	16,492	239.3	9,363	39.1
Canada	346.0	13,632	25.4	9,976	392.8
USSR ^c	554.8	2,000	277.4	22,403	80.8
China	265.5	213	1,040.3	9,561	9.2
Liaoning	13.2	398	33.3		
Jilin	6.4	274	23.4		
Heilongjiang	19.3	297	34.7		

Sources: World Bank; Chinese State Statistical Bureau; U.S. State Department; Stephen and Chelsa Knapp, *Soviet-American Relations on the Pacific*.

a. Based on 1983 data from Chinese Statistical Yearbook.

b. GDP is estimated from population data and an estimate of per capita GDP based on World Bank sources (see text); population data are for 1983 roughly adjusted for population growth to 1985.

c. GDP is estimated as discussed in text (6).

area, as does Northeast China. The Soviet Far East portion of this landmass has a very lengthy coastline. Japan, the DPRK, and South Korea also have lengthy coastlines compared to their total area. Northeast China fronts only on the Yellow Sea, and two of the three provinces included are landlocked (with some riverine access to the Japan Sea). Japan, the DPRK, and South Korea are relatively small countries in terms of area, and large amounts of their land are too mountainous for settlement. Thus, the region is split between the relatively land-rich north and the very land-poor south.

Just how land-poor the southern countries are is shown by the data on square kilometers per 1,000 population presented in the table.¹⁴ Except for the Soviet Far East and Mongolia the countries of the region have relatively high population densities, but only Mongolia is likely to have some sort of agricultural comparative advantage. This affects the options open for growth—

essentially making successful economic growth dependent on manufacturing growth and the absorption of the dense population into urban communities where economies of scale in servicing the population can be attained. This has been achieved in Japan and South Korea. Agricultural and mineral extraction are not going to absorb the existing underutilized labor force in Northeast China or the DPRK, much less the expected large growth in the labor force. Nor can agricultural or mineral extraction be expected to achieve large enough increases in productivity to achieve satisfactory national growth in such densely populated conditions. Regional integration that fosters manufacturing trade will be much more useful in this context.

As would be expected, there are very wide variations in GDP within the region, ranging from over \$1.3 trillion in Japan to \$1.6 billion in Mongolia in 1983.¹⁷ South Korea with a GDP of \$86 billion in 1983 provided the second largest dollar market; Northeast China was next at \$32 billion, followed by the DPRK at \$21.1 billion. Whether the result of above average per capita incomes or large populations, these are large incomes compared to those of most developing countries and again attest to the potential importance of an integrated regional market. In fact, the combined income of the region including Japan would be the third largest, after India and Brazil, in the developing world.

In per capita terms, Japan is of course far ahead and hence equally ahead as a market for income-elastic goods and services. South Korea and the Soviet Far East are in the World Bank's upper middle income range and have high enough per capita incomes to provide a market for most modern consumer goods, but only South Korea has the required population mass. The DPRK and Mongolia are lower middle income and China (and Northeast China) are low income. So as a regional grouping this would not be one of equals. Clearly, even with cultural barriers, there would be a great reshuffling of the location of the region's population if there was free movement of labor. This is just as clearly not going to be allowed—real wages are not going to be equalized by labor movements. But if the large differences in per capita income represent differences in worker productivity and thus in capital per worker (and not simply differences in the efficiency of use of capital) and these differences are reflected in the relative return to capital, movements in capital might begin to equalize real wages upward.

Finally, these differences in per capita income suggest still another reason for not expecting Japan to be an active member of any regional grouping, but to be the major outside lender and outside market destination of a mainland regional group. Japan may be able to maintain and even increase its real wages this way, especially as Japan becomes more and more dependent on technological advance for productivity gains, while shifting physical capital elsewhere in the region. Japan may help with technological transfer as well (but for higher education the others will have to look elsewhere).

Turning to the ratio of exports to GDP in Table 1.3, it is clear that the countries and parts of countries in the region have had very different approaches

Table 1.2 Trade emphasis of Northeast Asia: 1985

	GDP (bil- lion\$)	Exports (bil- lion\$)	Imports (bil- lion\$)	Exports/ GDP (%)	Exports/ pop.	Exports/ imports (%)
Northeast China	91.9	5.1		16.0	53.0	
North Korea	21.1	1.5	2.1	7.1	73.5	71.0
Soviet Far East ^a	15.4	2.1	2.2	13.9	278.4	96.3
Mongolia	1.6					
South Korea	86.2	38.3	38.1	35.1	736.8	87.3
Japan	1,327.9	173.9	158.5	13.2	1,435.8	134.8
Total less Japan	156.2	39.0	39.5 ^b	25.0	235.8	110.6 ^b
Total	1,484.1	214.9	198.0 ^b	14.5	758.6	129.5 ^b
USA	3,986.6	213.1	368.6	7.0	890.7	58.9
Canada	386.0	87.5	88.5	21.0	3,445.0	107.4
USSR	554.8	87.3	82.6	13.7	314.4	105.6
China	263.5	27.3	42.5	10.3	26.3	64.3
Liaoning	13.2	3.8			98.5	
Jilin	6.4	0.5			21.4	
Heilongjiang	19.7	0.8			21.1	

Sources: GDP data (Table 1.1); World Bank; Chinese Foreign Trade Almanac; U.S. State Department.

a. Soviet Far East exports estimated as 0.97 (from Jensen et al.) USSR export share \times Soviet Far East GDP.

b. Totals do not include Northeast China since imports through other parts of China could not be measured.

to integration with outside markets. South Korea has by far the greatest export share in output, followed by Northeast China. Clearly on any scale for a resource-poor, low-income, far from self-sufficient country North Korea is way below optimum in its international specialization. Though comparable data are not available, one would guess that the export share is relatively low in Mongolia as well. It is interesting that economic success lowers the export ratio as higher incomes shift the structure of demand toward services and nontraded goods.

In terms of per capita exports, a proxy for export effort, Japan is far ahead of the others. South Korea is next and still far ahead of the rest. China and the DPRK have a long way to go. Northeast China is ahead of the Chinese average export effort but still far behind the more open economies. Again, for regional integration the key is the wide regional variation, which would imply large regional opportunities for trade development as well as large structural shifts if the region comes together as a trading unit.

Looking at the ratio of exports to imports in Table 1.2, a rough measure of the net movement of capital, China and the DPRK are major capital importers in these relative terms. Though data are not available, discussions of the Soviet Far East claim that it is also capital-short.¹⁷ South Korea was close to balance in the year covered and since has become a capital exporter. Japan is a major capital exporter in relative and absolute terms. The symbiotic relation required for regional capital flows is there. But the kind of problem that can face the less developed part of the region is clear in the huge U.S. capital inflow. An economically integrated Northeast Asia—or regional projects—will have to compete with the United States in Japan's and South Korea's capital markets and with the growing Southeast Asian capital importers and, even more directly, with the Eastern European countries (and the Soviet Far West).

In addition to their export efforts, the structures of the regional economies also differ (see Table 1.3). In my opinion the size of these differences, except for Mongolia, results from differences in the stage of development rather than in any basic long-run difference in nonreproducible resources.¹⁸ China and the DPRK have relatively larger agricultural sectors that are not supported by their agricultural comparative advantage but are a result of underdevelopment. There is much room for transference of labor from agriculture to the service and manufacturing sectors in these countries if regional integration provides the stimulus. On the other hand, while shrinking with development, the share of agriculture in Mongolia's GDP should remain relatively high for a long time.

China and especially Mongolia and the DPRK also have relatively large industrial sectors and correspondingly small service sectors, along presumably with the Soviet Far East. Northeast China follows the national tendency, though the industrial sector there is larger and the service sector smaller than nationally. The emphasis on heavy, relatively capital-intensive industry in Northeast China and the DPRK, as will be seen below, does not follow their present comparative advantage.

The retarded service sector in these countries and regions results from their command economies and the provision of many services as part of the work or factory unit. None of these countries or parts of countries could compete with Japan or even South Korea in providing services if regional integration opened the door to competition in this field. They also are missing the employment safety valve provided by the low end of the service sector when structural change is necessary and consequently have much less flexibility in responding to forces calling for structural change.

The percentage of the labor force in agriculture, industry, and services shows even more variation than do shares of these sectors in GDP across countries and regions. All the region's countries have much more agricultural employment than the United States and Canada—a sign of the catching up to do in all but Japan (which chooses to subsidize agricultural employment). South Korea is a bit surprising in this respect. Japan, the United States and Canada, and both Koreas have about the same percentage of labor employed in indus-

try. The USSR has the largest share. But the big difference, as before, is in the size of the service sector employment. Here Northeast China has a much larger share of employment in services than is true nationally. This suggests considerable underemployment in Northeast China, given that the service sector in this region is a smaller share of total output than nationally.

Table 1.3 also gives data on the relative importance of the urban sector, which can help to illuminate the relative economic structures that integration would bring together. The existence of major industrial complexes with lots of externalities is shown by the percentage of the population in cities over 500,000 and by the percentage of the urban population in the total population. On the latter score China would especially seem to have possibilities for many infrastructure economies and for labor force growth based on absorption of more of the rural population into urban occupations. The DPRK has a relatively large urban share, but in relatively small cities, and at its present stage of development this is not economical. As expected, Mongolia has the smallest urban share. South Korea has about the same share of urban population as the North, but it is much more concentrated in large urban areas with resulting infrastructure scale economies. Japan has the largest urban share, but many are in cities less than 500,000. With Japan's transportation network and communications system and shifting production structure, this may be close to optimal.

Discussions of the preconditions for successful economic integration at almost any level emphasize the fact that countries must follow roughly similar exchange rate and monetary policies, achieving similar inflation and real interest rates and avoiding sharp shifts in policy one way or the other. Table 1.4 presents some very partial evidence (except for China all the less developed portions of Northeast Asia are missing) on this score. Looking at money supply growth alone, China has had by far the highest rate, both alone and in relation to growth in real income. South Korea is much more inflation prone on both scores than is Japan or the United States. These money supply growth differences are only partially reflected in reported inflation rates showing Japan with an average rate of inflation of 1.3 percent between 1980 and 1988, China with a rate of 4.9 percent (with bouts up to 12 percent), and South Korea with a rate of 3 percent (and falling) over the same period. Very likely the money supply growth data give a better picture of China's underlying relative inflation than do the reported inflation rates, which have obscure meaning in a command economy. One suspects that DPRK and Mongolia mirror China in this respect. Inflation in the Soviet Far East is also hidden by state setting of prices, though it has definitely recently been increased by price reform—exactly the sort of sharp change that is difficult to swallow in an integrated market. There are interest rate data only for South Korea and Japan, and there are large differences between these two with South Korea clearly subsidizing lending rates (and rationing capital). All in all, monetary and financial policies would have to be brought much closer together and kept there to support the opening of markets to one another via regional integration.

have been some changes in China and a lot of discussion of change in the former USSR, but state-run enterprises still dominate. And they dominate even more than average in Northeast China. The Soviet Far East has been trying to move away from planning to more use of the market but, like China, has major problems in the lack of experience in doing so, a vested bureaucracy that would lose if the move were made, and a general public that like all of us wants to have its cake and eat it too. The DPRK would have the same problems if it ever gets around to discussing reform. These differences in the economic systems are major stumbling blocks to any real regional integration—at the same time, they are a major reason for trying to move in that direction for the reasons already noted. It is easier to support capital movements to produce goods for exports outside the region—which could just as readily or more readily be organized on a bilateral or, at most, trilateral basis than in some regional compact.

RELATIVE FACTOR ENDOWMENTS: THE BASIS FOR REGIONAL INTEGRATION

Ideally one would like to present detailed data for each country or part of country and the region as a whole on the present factor proportions covering agricultural and natural resources as well as human and physical capital—with infrastructure treated separately and the institutional environment set out. Data on present production by a fairly detailed sector breakdown, a trade matrix covering the region, and information on revealed comparative advantage in similar detail, *vis-à-vis* each other and the world, would all help in analyzing the potential for regional integration. Of course, the required information is missing for much of the region—but especially for the Soviet Far East (and the former USSR), Mongolia, and the DPRK. There are surprisingly detailed data available at the provincial level for Northeast China, and most of the data required are generally available for economic analysis for South Korea and Japan—where we already know the answers.

There is one gap all around: we lack some unified measure of the natural resource endowment across countries. There are data by specific minerals, however, showing the leading producers. On the basis of one such compilation,¹⁴ the former USSR is one of the top four producers of 15 of the 18 minerals covered. In the region China meets this criterion for three minerals and is among the top 10 producers of 9 of the 15 minerals included in a world resource study. A relatively large portion of the former USSR's vast mineral wealth is in the Soviet Far East, and Northeast China, on the basis of production data, has a significant proportion of China's much smaller mineral wealth. None of the other areas—all countries—appear on this list as defined. All, except Mongolia, are relatively poor in natural resources.

There seems little doubt that the Soviet Far East has a wide range of minerals in world-class amounts. The question is whether at current world prices, given the relative inaccessibility of these deposits, bureaucratic inefficiencies,

labor shortages, the lack of needed infrastructure, and exchange rates that are not yet competitive, the Soviet Far East's mineral wealth is presently potentially competitive in world markets.¹⁶ Whatever the immediate answer, it is difficult to believe that the Soviet Far East does not have a long-run comparative advantage in mineral production—although, as the structure of demand changes away from traditional minerals and energy sources, there may be some question as to the relative long-run value of this comparative advantage. Taking this a step further, the Soviet Far East should also have a comparative advantage in fabrication of minerals and the potential of supplying the region and the world with processed metals and minerals on competitive terms in the long run.

Mongolia, on a per capita basis, very likely has a comparative advantage in the production of several minerals—especially coal—and could have a comparative advantage in processing these minerals. Northeast China has a larger than average share of China's mineral wealth and a likely comparative advantage in exports of basic minerals in world markets. Northeast China also processes minerals and markets them in China, but can they do this regionally? Or in the world? The rest of the region has a large comparative disadvantage in mineral wealth and production, and it is in this respect that most discussions of regional complementarity begin.

Table 1.3 gives agricultural land endowments per capita. All the countries of the region except the former USSR and Mongolia are far below the world average for arable and total agricultural land per capita. These data are not available separately for the Soviet Far East and Northeast China, but one would guess that the Soviet Far East would be far below the former USSR's position for arable land but above it for total agricultural land including forest land and that Northeast China would be considerably above the national average on both counts—but still well below the world average. Without a major climatic change (world warming?) the Soviet Far East is not likely to have a comparative advantage in any major agricultural commodity, except, of course, forest products. However, it is clear that in a regional trade agreement Northeast China would have a regional comparative advantage in many temperate climate agricultural products. If regional prices more closely approximate world prices than those in China, much of Northeast China's agricultural production would be diverted to the region from sales in the rest of China (not to say through Northeast China to the region from the rest of China as well, even if this does not represent China's long-run comparative advantage). Only Mongolia is in a position to have a long-run comparative advantage in agricultural exports, mostly in livestock products. But even with this agricultural enclave in Northeast China and Mongolia, the rest of the region individually and as a whole would not have anything like a comparative advantage in agricultural products. The resulting large regional net imports of agricultural products would, of course, help keep exchange rates at levels—as is the case now in Japan and South Korea—that facilitate the region's manufactured exports.

Table 1.5 Agricultural resource endowments

	Km ² arable land cropland per 1,000 pop. (1981-83)	Km ² meadows & perma- nent pasture per 1,000 pop. (1981-83)	Km ² forests & woodland per 1,000 pop. (1981-83)	Km ² total agr. land per 1,000 pop. (1981-83)	Cereal imports metric tons per 1,000 pop. (1984)	Km of coast per 1,000 pop. (1983)
Northeast China				.84		
North Korea	1.14	0.00	4.48	5.38	9.6	128.7
Soviet Far East						
Mongolia	8.33	458.33	82.33	790.00	27.9	0.0
South Korea	0.53	0.02	1.81	2.37	178.5	58.3
Japan	0.40	0.06	2.11	2.57	223.2	114.1
USA	8.27	10.34	11.81	30.41	5.2	83.8
Canada	19.23	11.54	134.62	165.38	32.1	3,904.9
USSR	3.06	13.71	33.06	54.84	90.6	168.0
China	0.99	2.80	1.28	5.05	7.1	13.6
World	3.04	6.63	8.56	18.23		0.0

Sources: World Bank; World Resources Institute.

Currently Japan's large current account surplus, a result of Japan's knowledge industry, high tech, and service exports, keeps the yen strong in world currency markets and would tend to make regional currencies tied to the yen overvalued in world markets. The yen's value is partially offset by Japan's large capital outflows, so diversion of capital to a regional yen bloc would further appreciate the yen and any currencies tied to the yen. But if Japan is on the outside of regional integration and the regional currency is allowed to fluctuate relative to the yen, then the region would benefit from appreciation of the yen and its manufacturing exports would benefit from its dependence on net imports of agricultural commodities. In the longer run, as discussed below, the effects of changes in the age composition of Japan's population are likely to reduce Japan's surplus and possibly weaken the yen—the exact outcome depending on what happens to the capital flows that now dominate the yen's value.

In terms of human capital per worker (see Table 1.6), all the region's countries have leaped the first hurdle and have most of the eligible population enrolled in primary school. Literacy, an important constraint on manufacturing production, is not a problem. At the secondary level, the region's enrollment ratios are high where data are available (except for China), although the DPRK's

secondary enrollment ratio might be higher. Though it is necessary to know something of the kind of secondary education available, it is probably safe to say that all the region's countries, except China, have a relatively large share of their labor force prepared for more advanced, more technically demanding, manufacturing and marketing operations. Northeast China is somewhat ahead of the nation in this respect, with a relatively higher secondary school enrollment than the national average. Certainly Northeast China has the absolute numbers required. But when it comes to the proportion of the population enrolled in colleges or universities, all lag North American standards. More directly, if Japan is used as a benchmark, except for South Korea the countries wholly or partially in the Northeast Asia region all lag considerably behind the Japanese standard. China, and presumably Mongolia and the DPRK, is especially behind in this respect.

Higher education is necessary for much of the labor force in most high-tech products and in the use of high-tech production techniques for producing less technical products. It is necessary for most financial and communications services, for the educational system itself, and certainly for the optimal processing and use of information. Marketing, in a world context, is also largely carried out by people with college or university degrees.

Finally, the research and development activities that keep a country or region on the forefront of the rapidly changing world production and demand environment require even more advanced education for which a university degree

Table 1.6 Human capital proxy: Enrollment ratios by school level: 1985

	Percentage of age group enrolled ^a			Percentage female secondary (%)
	Primary level (%)	Secondary level (%)	Tertiary level (%)	
Northeast China				
North Korea				
Soviet Far East ^b	106	99	21	99
Mongolia	103	88	26	92
South Korea	96	94	32	91
Japan	102	96	30	99
USA	101	99	57	99
Canada	105	100	55	100
USSR	106	99	21	99
China	124	39	2	32

Source: World Bank.

a. Number enrolled at a level/population in age classes normally enrolled at that level.

b. Assumed same as USSR.

is a prerequisite. The relative enrollment ratios in colleges and universities probably fairly well characterize the relative comparative advantage of the regional members vis-à-vis each other in terms of human capital and the potential sophistication of production.

In terms of the region versus the world, the Japanese advantage in advanced human capital would be enough to give the region a comparative advantage in this respect, especially with South Korea included. Without Japan, South Korea's human capital advantage would not be enough to offset the deficit in the rest of the region (in members only in the Soviet Far East) and a mainland integrated economy would not have a comparative disadvantage in advanced human capital. Specialization would be possible in some knowledge-intensive lines of production, perhaps on an intra-industry basis. On the other hand, such an economy would generally be ahead of the rest of the developing world in terms of secondary education and would, combining labor numbers with labor quality, definitely have a comparative advantage in skilled-labor-intensive goods.

The limited data available on physical capital per worker cover only China, Japan, and South Korea and are given in Table 1.7. Somewhat similar data—

Table 1.7 Physical capital/labor ratios

	Capital/labor ratio (1000s \$) 1983	Original cost fixed assets/ ^a household (yuan) 1988	Original cost industrial mach./ ^a household (yuan) 1988
Northeast China		1,458	53
North Korea	4.6		
Soviet Far East ^a	8.6		
Mongolia	3.4		
South Korea	11.1		
Japan	48.4		
USA	64.0		
USSR	8.6		
China	2.6	1,035	36
Liaoning		1,323	38
Jilin		1,841	39
Heilongjiang		1,645	35

Sources: Capital stock estimates were derived by summing real investment data provided on World Bank data tapes; labor supply estimates are from the same source; fixed assets per household, etc., are from Chinese Statistical Yearbook; USSR, North Korea, and Mongolia were estimated as described in the text.

a. Assumed same as USSR.

showing productive assets at original cost on a per household basis—are available for China and Northeast China. As discussed above, it is also possible to infer the rough order of the capital/labor ratio from relative per capita incomes, and this is done for the former USSR, the DPRK, and Mongolia.¹⁷ It is then assumed the Soviet Far East has the same ratio as the former USSR. Together, this information confirms that capital is relatively much more abundant in Japan than in South Korea and in South Korea than in the Soviet Far East and in the Soviet Far East than in the DPRK and Mongolia. China has the largest amount of catching up in capital per worker to accomplish. Northeast China has a slightly higher capital per household ratio than the rest of China and hence presumably a higher per worker ratio. For industry alone, however, despite the concentration of relatively capital-using heavy industries, the ratio is lower in Northeast China than for the nation.¹⁸

Within the region, Japan would have a clear comparative advantage in capital-intensive production and, on the basis of relative returns to capital, would be exporting capital to all the other parts of the region—if domestic policies or lack of necessary infrastructure do not reverse the relative returns to capital (the profits from increased use of capital) based on the relative abundance of capital. South Korea would also be a regional capital exporter since the return to capital, *ceteris paribus*, in that country would be less in many lines than it would be in other parts of the region where capital is less abundant relative to labor. This general conclusion about capital flows has been noted before—in fact it is a common observation—but these data give some empirical strength to the claim.

Vis-à-vis outside regions, because Japan's labor force is the largest and is so well equipped, even adjusting downward for the lower capital/labor ratios in other parts of the region would still give a regional ratio of capital to labor several times that of, say, South Korea.¹⁹ This means that in world markets, with the reallocation of capital regionally, the region would have a comparative advantage in physical capital-intensive production (medium to heavy capital-intensive). However, there is little likelihood that existing regional capital, largely in Japan and South Korea, would soon be regionally reallocated—for one reason because the higher returns that should exist in the capital-short parts of the region are not there because of the many production and organizational inefficiencies and for another because, even if the higher returns were there, the recapture of capital through depreciation is a slow process.

Instead, it is more likely that more of the growing pot (that is, current savings) would be directed toward the labor or natural resource abundant parts of the region. There would clearly be a lot of catching up to do, and there should be high returns in the process. These comments refer to the physical capital stock. Financial capital held by Japanese in and out of the country is immense and could be much more easily redirected. The same is increasingly true for South Korea. However, the perceived returns are higher now in the developed countries and in Southeast Asia than in Northeast Asia. A regional agreement might go a long way toward changing this.

As described, relative resource endowments can change over time through human and physical capital accumulation—essentially savings—and through relative growth in the labor force. The basic natural resource endowments cannot change, but new knowledge and applications can change their relative scarcity and the capital applied to them can change. Japan, South Korea, and China have by far the highest saving rates in the region. China needs these savings and more in its catching-up process. As noted, however, Japan also has one of the world's highest capital/labor ratios and the region's slowest labor force growth (see Table 1.8). The latter both encourages the substitution of capital for labor by raising the relative cost of labor and reduces the growth in the capital stock required by labor force growth alone and hence the returns to capital widening. As profitable substitution opportunities are accomplished, the returns to capital accumulation of this sort (accumulation that increases capital intensity) will fall domestically as well. In other words, the returns to continued domestic capital accumulation (except the part based on new technology) will clearly decline in Japan. With a relatively high capital/labor ratio and a rapidly falling labor force growth rate, something similar to this will be taking place in South Korea. As long as savings ratios remain high—and the same force reducing labor force growth will at some point reduce savings ratios as well—there will be a real and growing incentive to move traditional forms of capital elsewhere. The rest of Northeast Asia has to compete worldwide for these funds, but a reformed and growing regionally integrated market would certainly help.

Table 1.8 Influences on relative factor proportions: Northeast Asia

	Savings/GDP ^a (%) 1985	Revenue gap (%) 1985	Annual average growth of labor force (%)		
			1963-80	1980-83	1981-2000
Northeast China ^a	36	-3	2.4	2.5	1.4
North Korea			3.7	3.0	2.8
Soviet Far East ^b			1.2	0.9	0.5
Mongolia			2.7	3.0	3.8
South Korea	35	5	2.8	3.7	1.9
Japan	33	4	1.8	0.9	0.5
USA	19	-3	2.3	1.3	0.8
Canada	22	1	3.3	1.4	0.9
USSR			1.2	0.9	0.5
China	35	-3	2.4	2.5	1.4

Source: World Bank.

a. Adjusted same as China.

b. Adjusted same as USSR.

Summing up, then, based on the subjective evaluation of the evidence presented above, Table 1.9 covers the relative world comparative advantage of the Northeast Asian countries in matrix form. The relative advantage of the region as a whole, excluding Japan, is also given. As there is considerable guesswork in the world comparisons, let us start by looking at the more reliable intraregional relations.

Mongolia, the Soviet Far East, and Northeast China have a regional comparative advantage in agricultural and mineral resources. All but Mongolia and Northeast China have marine resources (not shown separately in the table) in relatively large amounts. In terms of physical and human capital per worker, Japan is far ahead though South Korea and the Soviet Far East also have a regional comparative advantage. The DPRK and Northeast China have relatively abundant labor and a comparative advantage—currently not taken up by either one—in labor-intensive production. South Korea and Japan have a regional comparative advantage in all aspects of capital-intensive production, from knowledge-intensive to physical-capital-intensive. Northeast China and the DPRK are currently inefficiently producing relatively large amounts of the physical-capital-intensive products under highly protected circumstances. But even with more efficiency, they would not have a regional comparative advantage for now in physical-capital-intensive production, though capital inflows could speed their progress to that point. Economic efficiency and the institutions bringing it about get a plus only in Japan; South Korea is neutral in this respect. All the others have much to gain from improved efficiency. Economies of scale because of market size are present in Northeast China (numbers), Japan (numbers and income), and South Korea (income with sufficient numbers). The directions of trade by broad categories of products within the region that would follow with economic integration and reform are clear from this summary.

For the region vis-à-vis the world, it is more difficult to draw conclusions. If Japan is included, Japan's huge current account surplus, especially now that capital outflows are growing less rapidly, will tend to keep the yen strong along with currencies tied to the yen. Unless Japan transfers capital and production from home to the rest of the region, this would work against the manufactured exports of the other parts of the region in world markets, especially the less sophisticated and less established exports of the socialist countries. With time and the aging of the Japanese population this situation will change, but for now the region would not want to follow the yen in world markets.

For this reason and because of the large differences in current endowments and integration in world goods, service, and financial markets, Japan is best thought of as the closest developed-country market and source of financial capital rather than as part of any regional grouping. South Korea could either be treated the same as Japan or included as a regional leader on the path to modern economic growth. I have chosen the latter route.

In agriculture—except for forest products, a major export item—the region would have a comparative disadvantage and be a net importer on world mar-

Table 1.9 Summary: Factor endowments and comparative advantage

	Soviet Far East	NE China	DPSE	Mongolia	RCE	Region	Japan
Total agricultural resources/labor	1	2	3	1	2	1	3
Arable cropland	3	2	3	3	3	3	3
Mineral resources	1	2	3	2	3	1-3	3
Labor force size	3	1	2-3	3	2	1-2	1
Physical capital/labor	3	3	3	3	3	3	3
Basic human capital/labor	1	2	2	2	1	2	3
Advanced human capital/labor	2	3	3	3	1	2-3	1
Labor-intensive production	3	1	1	3	2	1-2	3
Physical-capital-intensive production	3	2-3	2-3	3	1	2	1-2
Human-capital-intensive production	2	3	3	3	1	2-3	1
Economic efficiency	3	3	3	3	3	3	1
Market size (numbers)	3	1	3	3	2	1	3
Market size (income)	3	3	3	3	2	3	1

Rankings:

1 = best world average.

2 = best world average.

3 = best world average.

lets, though there might be some displacement of current imports by sales to the region by Northeast China (diverted from sales to the rest of China). While having a world comparative advantage, Mongolia's relatively small agricultural output would be largely absorbed by the other members of a regional grouping. Even if part of a yen bloc, however, the Northeast Asian region would clearly have a mineral-intensive advantage in world markets.

Given the current relative abundance of labor with at least a secondary school education, skilled-labor-intensive production might have a world competitive advantage. But where standardized production with relatively unskilled labor is involved, even without Japan the region would find it difficult to compete with South Asia, Indonesia, and the Philippines as well as the rest of China in world markets. More skilled and more specialized production—but still relatively labor-using, where experience counts—might be better supported for exports at competitive world prices by the economies possible from regional integration.

Having relatively abundant mineral resources and a sufficiently skilled labor force, with a large infusion of capital and technology, heavy industries producing intermediate products or processing minerals could in time develop a lasting comparative advantage in Northeast China and the DPRK. But that would be a somewhat distant goal. A more immediate problem for these countries with regional integration, given the relative resource and factor endowments described, is that the industries which would develop along the lines of present comparative advantage should for now require relatively large amounts of skilled labor and/or natural resources and/or agricultural inputs compared to what is possible in nearby countries and worldwide. This raises significant structural adjustment issues since many of the state-subsidized heavy industries in Northeast China, Mongolia, and the DPRK would not meet these conditions and would not survive if exposed to world (or even regional—from South Korea) competition. This is not so large a problem in the Soviet Far East, where development to this point has been more closely based on comparative advantage. Here, in future, world exports could follow a wide range of factor compositions—from the most advanced technology (in mining and processing) to labor-intensive, using imported labor, for production based on the region's mineral and marine wealth.

The major shortcoming of the Northeast Asian region as a base for modern production is the endemic economic inefficiency. This has, as I have discussed, turned comparative advantage on its head in several instances. In addition to the size of the relatively skilled labor force and the basic mineral wealth, the major strength of the Northeast Asian region is the large regional market that could accompany regional economic integration. A market this size raises the possibility of using intraregional competition in an initially protected market to develop the product competitiveness necessary for success in world markets.

Trade patterns for China, Japan, and South Korea for which comparable trade data were readily available (see Tables 1.10 and 1.11) follow closely expec-

Table 1.10 Structure of merchandise exports: 1986

	Machinery and transport equipment	Other manu- factures	Textiles, clothing	Other primary com- modities	Fuels, minerals, metals
Northeast China					
North Korea					
Soviet Far East					
Mongolia					
South Korea	33	58	15	6	3
Japan	64	34	3	1	1
USA	48	41	3	17	7
Canada	42	22	1	18	18
USSR					
China	16	48	34	22	14

Source: World Bank.

Table 1.11 Structure of merchandise imports: 1986

	Machinery and transport equipment	Other manu- factures	Other primary com- modities	Food	Fuel
Northeast China					
North Korea					
Soviet Far East					
Mongolia					
South Korea	34	30	15	6	16
Japan	11	34	13	13	31
USA	42	16	3	3	18
Canada	16	19	3	6	3
USSR					
China	31	56	3	7	1

Source: World Bank.

tations based on the foregoing relative factor endowments. China exports almost no machinery and equipment, relatively large shares of textiles and other manufactures, and a much larger share of fuels, minerals, and metals than either Japan or South Korea (many of the latter from Northeast China one would

goods). South Korea has large export shares for textiles and other manufactures and much larger machinery and transport equipment exports than China. Japan, of course, specializes in machinery and transport exports. Only China has a significant share of exports of other primary products—here mostly agricultural and related products, many of which come from Northeast China.¹⁰

Turning to the rest of the region and a variety of other sources of information, the Soviet Far East exports almost exclusively minerals and metals, mostly unprocessed, and marine products, which also conforms to the expected comparative advantage of this region.¹¹ The DPRK's very low exports consist largely of foods to Japan and industrial products traded on a barter basis with other socialist countries. These exports do not follow the DPRK's current comparative advantage. Finally, Mongolia exports food products, minerals, and some heavy manufactures, almost entirely to the former Soviet Union. But the current economic reforms and regional economic integration could rapidly change both the direction and the composition of Mongolia's trade.

On the import side, Japan's extreme dependence on imported fuels stands out, as does China's independence of energy imports. China imports relatively large shares of other manufactures, often from Japan, Taiwan and South Korea via Hong Kong, unexpectedly large shares of food (1985 was a bad harvest year), and about an average share of other primary products. Japan imports relatively large shares of food and other primary products, very little in relative terms in the way of machinery and transport equipment, and growing relative shares of other manufactures—a result of Japanese joint ventures. South Korea and China, but especially South Korea, import relatively large shares of machinery and South Korea imports relatively large shares of fuel.

Presumably the Soviet Far East imports relatively large amounts of other manufactures, especially consumer goods and machinery, but I have no confirmation. One would expect that Mongolia does the same. The DPRK imports fuels and machinery and transport equipment and food, but there is no information on their relative shares.

Most of the trade structure reported in Tables 1.10 and 1.11 or inferred from other sources is predictable on the basis of relative factor endowments. This gives confidence that consideration of such endowments, in broad terms, will indicate the direction that comparative advantage within the region and between the region and the world would take with greater economic integration.

ECONOMIC TRENDS AND OTHER DEVELOPMENTS

There are several current developments that may significantly affect the prospects for successful economic integration, whether of the project type or the more general type I have been discussing. Most important, perhaps, are the demographic and structural changes—which are related, of course—occurring worldwide. The composition of demand for primary inputs and the

amounts and directions of capital flows are becoming very different as a result. Particularly interesting in this respect is what is happening in Japan. In addition, the rapid changes taking place in Eastern Europe, including the Soviet Far West, the effects of EEC integration in 1992, and Hong Kong's reabsorption in 1997 will all influence the viability of economic integration in Northeast Asia. The fact that most emphasis on regional cooperation in Asia has centered on Southeast Asia, expanding out from there to other countries on the Pacific Rim, also adversely affects Northeast Asia's prospects. Except for Japan and South Korea, Northeast Asia has been peripheral to these discussions. Currently stalled—hence less needful of attention—but likely to have an important influence if it happens is the nascent South Asian regional cooperation (SAARC) movement.

The system reforms under way in Eastern Europe will compete with Northeast Asia for capital, especially from the multilateral lenders or on subsidized terms. This will make the funding of the needed infrastructure underpinning more difficult and costly and will also raise the average level of return that will have to be expected from regional projects for them to attract funding. Even at the commercial level, opening up more profitable opportunities in Eastern Europe must ration out some of the existing set elsewhere. Moreover, Japan is likely to come under increasing political pressure to shift funds to Eastern Europe. All this does not rule out successful Northeast Asian integration, but it would slow the pace of resulting development. On the other side, there are already substantial trade relations between the socialist parts of Northeast Asia and Eastern Europe and more rapid growth in that region could be to the advantage of exports from an integrated Northeast Asia.

Greater economic integration elsewhere should enhance the political climate for more regional integration in Northeast Asia and, to the extent it diverts trade (say by replacing current net imports with production within the EEC), it enhances the benefits from creation of larger regional markets elsewhere. Of course, both moves tend to reduce world income, but you have to work with what you have. Also, where trade diversion occurs, as we have already seen, there is an attraction to move capital (and production) behind the barriers creating the diversion, which would reduce the supply of capital to Northeast Asia unless Northeast Asia provides a competitive protected market. But if trade diversion does not result and world economic growth is enhanced by increased regional integration elsewhere, then the benefits to be obtained by Northeast Asia's greater ability to compete in world markets would also be greater. These considerations, clearest for the EEC, also apply to any North American or Pacific Rim grouping as well as to the long-established but barely integrated ASEAN and the recently created SAARC. The absorption of Hong Kong by China would seemingly remove some of the special advantages Hong Kong has had as a trade conduit and would correspondingly improve the competitive position—if the transportation infrastructure is in place—of Northeast Asian trade through the Yellow Sea and Northeast China.

In structural terms, the fastest-growing sectors of the industrialized economies are their service sectors and knowledge-based industries, especially communications and information industries. This is now true of Japan and the United States and is becoming more so for the EEC. The effect of this—along with technological progress that has introduced many substitutes for traditional intermediate and primary products (spurred initially by the two oil shocks of the 1970s)—is to reduce the growth rates for the latter, even to negative levels in some industrial nations. The substitutions involved have not begun to the same extent in less industrialized countries; but as they develop, similar changes in production structure are likely to occur.

There are three results of these developments of direct concern to mainland Northeast Asia. First, there is less incentive for Japan to invest in the development of metal or mineral input sources (even energy sources), which has direct implications for the Soviet Far East.¹⁸ Second, instead of as in the past mostly relocating production that has lost its comparative advantage in Japan to countries where that comparative advantage remains, which could directly aid Northeast China and the DPRK and possibly the Soviet Far East, Japan's direct foreign investment is more and more directed toward nonmanufacturing sectors. In fact, by 1988 the cumulative share of nonmanufacturing (less mining and other primary sectors) was over 60 percent of the total. By far the largest single component was in banking and financial services, followed by other sectors that mimic Japan's current comparative advantage instead of Japan's emerging comparative disadvantage as in the past. Third, the present structure of comparative advantage in Northeast Asia places heavy emphasis on exactly those primary products whose markets are growing less rapidly and for which the search for substitutes, motivated either by environmental or relative price concerns, is motivating much research and development (fossil fuels, fossil-fuel-based products, asbestos).

These developments have obvious negative long-run implications for regional integration based on the current comparative advantage in minerals and developed-country capital. The substitutions involved have yet to begin in much of the developing world, however, where growth potential is greatest. If quick action is taken, these resources can still attract capital and help support a self-feeding growth process based on regional integration for some time to come. Essentially, the long-run market trends these developments portend raise the current returns to Northeast Asian economic integration.

South Korea, with an economic structure (and resource base) that follows Japan's closely, is also showing lower income elasticity of demand for nonagricultural primary products. But South Korea's direct foreign investment still has a considerable share in the manufacturing sectors South Korea is sloughing off as its comparative advantage changes.¹⁹ More of this share would move intraregionally with regional economic integration.

The potential impact of the continuing communications and information "revolution," as well as the changed products and production techniques in

makes possible, is another important consideration in Northeast Asia's economic future. This revolution has led to the rapid dispersion of taste changes, to the homogenization of tastes (hence markets are more easily penetrated by outsiders), to the rapid spread of other forms of new technology, and to the more rapid obsolescence of existing technology. In fact, the combination of new developments in information systems with robotics is potentially so cost-saving it could reverse the present comparative advantage of many countries based on abundant labor. Clearly, the rapidly changing technological scene carries both a threat and a promise. Flexibility in response to these changes and adaptability in the face of uncertainty will be the keys to success—both characteristics that are enhanced by regional economic integration (but not regional projects).¹⁰

Finally, turning to the demographic changes under way, present and future growth of population differs considerably in Northeast Asia (see Table 1.12). North Korea will continue to have high population growth rates; Japan and the former USSR will continue to have very low population growth rates. China and South Korea are in between, with huge absolute numbers added every year in China. This implies rapidly changing and very different age compositions and hence labor force configurations in the future in these countries and in the region.

Japan is about to become the "oldest" country in the world. This will surely work to reduce the high net savings for which Japan is famous. Meanwhile the labor force growth in Japan is slowing rapidly and will soon become negative—with the expected effects on the relative costs of labor and capital and hence on the production structure, already seen in the growth of service and knowledge industries that use large amounts of human capital per worker and in the robotization of manufacturing. Along with encouraging the substitution of capital for labor, these demographic trends will increase the emphasis on the quality of life and on investment that helps to raise that quality—including housing. Thus the demand for savings relative to GNP may be increasing, or at least not falling, at the same time the savings ratio will be decreasing. Since Japan will not import labor, except possibly on a contract basis for specific projects, that solution cannot relieve the pressure as it has in the United States. This means repatriation of overseas capital as the relative returns to capital inevitably rise in Japan and the investment of overseas investment income within the country—which has direct implications for funding of Northeast Asian regional integration. On the brighter side, these developments are going to raise Japan's imports without a comparable increase and possibly a decrease in Japan's exports. (The Japanese domestic investment discussed above will have a heavy weighting of nontraded goods). This will provide a growth market for the more labor-intensive consumer goods conforming to the present comparative advantage in Northeast China and the DPRK,¹¹ and for the machinery and equipment linked to these goods, which should benefit South Korea. It will stimulate growth in the market for intermediate inputs from the Soviet Far East as well.

Table 1.12 Future demographic change in Northeast Asia

	Pop. 2000	% change in pop. 1996- 2000	Share pop. 0-14		Share pop. 15-64		Share pop. 65+		Average annual growth of pop.		
			1998	2025	1998	2025	1998	2025	1993- 98	1993- 98	1993- 98
Northeast China											
North Korea	28	14.0							2.7	2.5	2.1
Southern Far East											
Mongolia	3	20.0							3.0	2.8	2.4
South Korea	49	16.1	22.3	18.0	62.9	66.6	9.8	16.8	1.9	1.4	1.2
Japan	129	6.2	19.6	13.7	68.9	68.8	11.5	25.5	1.2	0.7	0.3
USA *	263	8.9	20.6	18.0	66.8	68.2	12.4	20.8	1.0	1.0	0.6
Canada	38	9.4							1.3	1.1	0.7
USSR	312	11.0									
China	1,279	21.3	22.1	28.3	66.3	66.6	5.6	12.9	0.9	1.0	0.3

Source: World Bank; UN population report.

South Korea will be following the same demographic path as Japan, but several decades behind. The labor force growth is falling now in South Korea and will become negative in 30 years or so. Labor shortages are raising the relative cost of labor and leading to sharp shifts in the structure and location of production. Labor-intensive industries—which still account for an impressive part of South Korea's exports—are being pushed out. Someday soon they will have to account for an equally impressive part of South Korea's imports. Along with labor force growth, the young dependency rate will continue to fall. Until these changes begin to be reflected in the relative growth of the older population, this should enhance savings in South Korea. It will also enhance the upgrading of educational quality, which supports South Korea's emulation of Japan and the continued shift to more sophisticated consumer goods as well as to knowledge-intensive activities (but not to services). The changes forecast for Japan will further support these trends and help to enhance South Korea's position as a regional leader.

A slowdown in labor force growth, following the reduction in population growth, is occurring in China, and Northeast China is slowing more rapidly than the national average. Negative labor force growth is a long way off, however, and in the meantime the large numbers entering the work force and, more important, currently underemployed in state enterprises and agriculture will give Northeast China abundant labor in relative regional and world terms for the foreseeable future. Dependency ratios will still be falling for awhile, encouraging increased savings and, given the future increase in these ratios, placing an emphasis on the efficient use of those savings.

With population growth still very high and similar underemployment, the DPRK also should have a labor surplus for some time and an advantage in labor-intensive production. With reasonable economic growth, however, any labor shortage could fairly quickly disappear—shifting comparative advantage first to heavier industry and still later to knowledge industries as in the South. Basically, the young dependency ratio will remain high in the DPRK, either reducing educational quality, reducing the capital available for other uses, or forcing savings with policies that reduce incentives and efficiency. Mongolia has the highest population growth rate in the region and should have the youngest population as a result. Even if this high growth rate continues for another century, the relative population density of this country would remain among the world's lowest. But if population growth raises no problems in the "space" sense, providing the capital to keep the capital stock growing more rapidly than population and hence to keep per capita incomes growing will certainly offer a major challenge.

In the former USSR a decade or so later than in Japan, labor force growth will become negative and the proportion of older people will increase to unprecedented levels. This will surely work to reduce net savings in the former USSR and provide incentives for labor-saving and capital-saving technologies, which may have negative connotations for the relatively capital-intensive ex-

reactive industries of the Soviet Far East. Nationally, pressure on wages may be put off by the large present amount of underemployment. Whether or not the Soviet Far East will have the same experience will depend on the extent of migration from the rest of the former USSR. Even if efficiently used, labor is short in the Soviet Far East and meaningful growth could either be put off by or soon come up against labor constraints. In a more market-oriented economy, internal migration would depend on the pull of real wages, which would have to be considerably higher in much of the Soviet Far East to offset the harsher living conditions.

Generally, the demographic changes coming in the next 30 years or so will enhance the present comparative advantage in skilled-labor-intensive and resource-based manufactures of the proposed Northeast Asian regional grouping. Labor shortages will promote capital reallocation within the region that supports these sectors. But if steps are not taken to increase economic efficiency in the socialist countries involved, the results of demographic change may be increased underemployment and social unrest rather than those described. Capital/labor ratios and per capita incomes may fall rather than increase. Regional economic integration would directly enhance the probability that the conditions necessary for the required economic growth occur.

SUMMARY AND CONCLUSIONS

To paraphrase what was said at the beginning of this paper, if via economic integration mainland Northeast Asia gets the necessary capital for infrastructure and industrialization and has open trading, it is difficult to see how Northeast Asia can fail to have rapid economic growth. The greatest relative increases will be in the subregions that now lag the most: the DPRK, Northeast China, Mongolia, and the Soviet Far East. South Korea would benefit by maintaining higher growth rates than would otherwise have been possible. To a lesser extent, given Japan's greater coming adjustment problems and relative economic size, so too would Japan benefit as the major trading partner and creditor of any mainland Northeast Asian grouping.

The greater growth achieved would come from a variety of sources. These include increased capital/labor ratios, technological transfer and catching up, increased specialization from trade (both within the region and between the region and the rest of the world), the dynamic effects of capital flows, economies of scale from larger markets, and, most important, the effects of greater competition on economic efficiency.

There are numerous problems, however. For example, showing the potential for growth with regional integration in Northeast Asia will not be enough to attract the capital needed to take advantage of the opportunities created. Private international capital looks for infrastructure, labor with requisite skills at relatively lower cost than elsewhere, natural resources, stable institutions (especially those covering property rights), currency convertibility, and low bureaucratic drag. There could be regional difficulties, as discussed above, at

several points on this list. To the degree that success depends on attracting private funds, they must be addressed.

More important for the resulting outcome than the complementarity issues often raised in discussing capital flows to an integrated Northeast Asia is whether or not any capital raised will be well and efficiently used. Efficiency in resource allocation is not a strong point of any of the socialist economies involved. And for China and the former USSR, finding a way to divorce the regional exchange rate from the national rate, which may be much different than needed regionally, provides a major challenge. Finally, the issue of structural adjustment must be faced, especially in Northeast China and the DPRK, as development leads to substitution of production along the lines of comparative advantage for less efficient production now encouraged by distorted prices and resource allocations.

Apart from the general benefits from the efficiency effects of greater competition, the specific benefits from regional integration will come to different sectors and in different ways throughout the Northeast Asian region. The northeastern region of China has fairly abundant natural resources as well as abundant labor, but it lacks infrastructure, physical capital, and technological and management know-how and will gain all three. Mongolia lacks abundant labor but otherwise is similar to China and will benefit accordingly. The DPRK would also gain by greater access to physical capital and technological and management know-how. Though labor is now relatively abundant in the DPRK, with growth the DPRK would soon face labor shortages. The structural adjustments required by this development would be eased by the opportunities created through regional cooperation.

The Soviet Far East is basically resource-rich, with shortages of all other factors of production, and would benefit from the less costly access to these factors or their end products through the trade encouraged by regional integration. On the other hand, South Korea is relatively capital-rich, both in human and physical terms, but is becoming increasingly short of labor and has always been short of basic natural resources. Moreover, as South Korea makes the transition to an even higher technological base, the opportunity to "sell" its technology in a large but nearby market could be a real advantage. The gains to South Korea from increased integration with countries or parts of countries possessing relatively large amounts of the resources in short supply in South Korea are obvious.

Japan is far and away the most economically powerful country of the region, but the western region of Japan, the area initially most directly involved, has many of the characteristics of South Korea and this region would stand to benefit considerably from sustained high levels of economic growth in the rest of Northeast Asia. Western Japan would gain natural resources and markets and would contribute capital and technology. In the long run, the lack of domestic natural resources and the extreme labor shortages facing Japan should make increased trade with a mainland Northeast Asian regional grouping

having abundant labor and natural resources more and more desirable for all of Japan's regions. Nearby sources of natural resources will become more and more important in sustaining Japan's competitive edge in its remaining manufacturing sector—as will nearby markets—as competitors approach Japan's technological capabilities and the European countries become fully integrated. Thus Japan has a present stake in funding a viable move toward greater regional economic integration in mainland Northeast Asia.

In closing, I must point out that there remain a host of unanswered questions requiring further study. Thus I must also encourage the devotion of more regional effort to jointly carrying out these studies.

APPENDIX: WHAT LEADS TO SUCCESSFUL REFORM?

Several hypotheses have been advanced for the successful adoption of policies enhancing growth. I will briefly review some of the most widely held explanations of why many of the policies called for by the new orthodoxy of export orientation were adopted in East Asia (and Thailand) and by implication why they were not adopted elsewhere.

The Resource-Poor Hypothesis

The argument here is that the poorer in natural resources a country is the more likely the country will be outward-looking and successful at industrializing if it opts for economic growth. The reason is that a poor country has only two options: continued near-subsistence-level traditional production, as in Nepal and Bangladesh, or growth based on international specialization, as in South Korea, Japan, and Taiwan. Since many inputs must be imported, the exchange rate that balances imports and exports will give them a price advantage on industrial exports compared to countries with a relatively larger resource base. Thus South Korea has an inherent advantage over Thailand in achieving industrialization and industries that would thrive at the equilibrium won/SDR rate might not succeed, even if identical in all other ways, at the equilibrium baht/SDR rate.

This resource-poor effect is more important for small domestic markets. Japan took the choice of import substitution for a while, but given Japan's resource base, this phase had fairly soon to give way to export growth for continued economic growth. China has this option as well, but in per capita terms China is also very low in resources and for sustained growth will have to continue the major move begun toward export orientation. Resource deprivation cannot be the whole story, however, since many poor countries have opted for stagnation and some resource-rich countries have achieved impressive growth

(Thailand). However, most resource-rich developing countries find their non-traditional sector "penalized" by their large exports of natural resources. And when large price increases in the latter occur, they have further to contend with the so-called Dutch Disease. If they follow the market, their growth will be less than in the resource-poor countries, because their production mix will include a larger proportion of primary products. But if they try to match the industrialization pace of the resource-poor, they will create lasting problems to go along with the slower growth.

The Head Start Hypothesis

The idea here is that the fast growers in the postwar era were considerably ahead of most developing countries in terms of infrastructure (ports, transport systems, power supplies, educational system, and stock of human capital) when they began the growth process. And if they were not, U.S. and international aid helped them get there by 1960. Countries in this position, as opposed to others, did not have to devote most of the resources they mobilized to infrastructure improvement, which takes time and is not easily privately funded. Thus they could take advantage of the opportunities for expanding exports in the 1950s, 1960s, and late 1970s, when world trade expanded rapidly where others could not. Clearly, having the necessary infrastructure in place is a necessary condition for growth. And, equally clearly, several of the countries covered in this study had a head start in this respect.

Japan was effectively a developed country long before World War II and thus, although set back by the 1930s and the war, had a human capital and infrastructure advantage compared to most countries at or near Japan's per capita income level. A relatively advanced educational system and the accompanying human capital, as well as relatively modern transportation, port, and communications facilities, were left by Japan in Taiwan and South Korea at the end of World War II (and both got U.S. aid as well). China had advanced ports and a beginning transport network at the beginning of its growth push, but it also had major (and increasing) educational and communications gaps.

The Social Upheaval or Blank Slate Hypothesis

Here the idea is that the absence of vested interests with control of the political apparatus who will lose (or think they will lose) if land reform occurs or if new opportunities are opened or if exports are pushed (and imports liberalized) is conducive to adoption of the policies that will work. If the shock necessary to bring this situation about also involves destruction of some part of the capital stock, this gives an incentive to the accumulation of capital and to the accumulation of capital of the latest vintage. While not enough alone to explain above-average growth in the group of countries covered, these conditions were again clearly met in several. War destroyed most of the vested interests and much of the social fabric of Japan, Taiwan, and South Korea as well as a considerable part of the capital stock in Japan and South Korea. (Just

how far the social changes went in Japan is moot.) Revolution and war had a similar impact in China.

The Confucian Culture Hypothesis

Noting that all the NICs have been strongly influenced by the Confucian view of individual responsibilities and of the state, the conclusion is that this must be the cause of their success. (This reverses the earlier idea that the Confucian outlook was responsible for their relative failure.) How important this outlook is in Japan, where the Shinto religion and Buddhism have perhaps more importantly shaped attitudes, is not certain. But clearly this is not the only factor at work or China would have had the most success and Korea and Taiwan would not have been as underdeveloped as they were before World War I. Perhaps in the cultural context, the homogeneity of the population is the key. This means that similar values are shared by all and that a common consensus is possible. (There is room to support export orientation in any value system.)

Also important may be the fact of a long history solidifying national identity and hence increasing the possibilities for national consensus. Where countries are divided by language, religion, culture, or a regional identity overwhelming national affiliation, the political process is likely to be very divisive, with groups using political power to support narrower than national interests or ending up stalemated. Even if the national interest is fostered by a policy change, if any one group is seen to gain more by the policy change, the change is likely to be strongly opposed. Where changes take time to produce results and one group suffers more, again strong opposition is likely. All this works against making the policy and structural changes necessary for long-run growth and places an excessive emphasis on the supposed equity elements in economic policy and activity. Again, clearly, Japan, Korea, and China are more homogeneous with a longer shared history than almost all the rest of the world's nations.¹⁴

The Historical Opportunity Hypothesis

The basic argument here is that the main difference between the successful countries and others is the lucky timing of their move to export promotion. This progeny of the Prebisch-export pessimism really is not an explanation of why the successful succeeded but an argument about why others will fail if they follow outward-looking policies in less propitious times. Essentially, whatever the reality of the assertion of increasing protectionism that generally accompanies this position, it is the same as saying less specialization is better than more. There is no way a country can be better off in the long run by concentrating on domestic production and self-sufficiency rather than taking advantage of the productivity-enhancing opportunities inherent in comparative advantage and international specialization. This conclusion is independent of whether trading partners distort prices through protection or not—as long as they do not constantly change the bias of their distortion. All that have tried

import substitution as a long-run policy in any historical period have done less well than countries that were more open.

Having said this, it is true that holding together a consensus for new policies is more easily accomplished if they seem to work. If adoption of an outward-looking reform package initially leads to increased imports without much significant change in exports, the reform package is less likely to succeed politically whatever its actual long-run benefits. Thus the historical period is important. It was conducive to the success of Japan, South Korea, and Taiwan that the world opened up the eagle of the U.S. hegemony just as they were pushing outward on the growth path.¹¹ Moreover, the Korean War and the Vietnam War and the Cold War helped several of the workshop countries make the transition to export orientation—the first two because of the regional markets created and the third by the foreign aid presented and its impact on the continued willingness of the United States to provide much of Japan's defense in the crucial period of Japan's economic development.

Finally, as noted, it might be argued that the countries being analyzed here were "lucky" in being unlucky in terms of resources. To repeat, they did not have to contend with the Dutch Disease inflicted on the oil producers (though China may have been more than marginally affected). For this reason and because of their basic dependence on imported raw materials, they had a definite advantage in achieving growth in their manufacturing exports not shared by much of the rest of the developing world.

Other Arguments

It is sometimes mentioned that demographic factors have played a causal role in supporting rapid growth. All the successful growth countries have experienced a drop in population growth rates following a major birth or child survival boom, with the boom leading the major growth push. The effect was that growth in the labor force matched economic growth, thus keeping real wages from growing rapidly as well as increased labor force flexibility and adaptability accompanied by increasing amounts of human capital. To what extent this was "luck" and—on the falling birth rate side—an endogenous outcome of the beginning of the growth process remains to be ascertained.

Other population-related arguments involving growth supporting labor force changes include the effect of immigration responsive to economic conditions or resulting from social upheaval. Either one infuses a politically weak but dynamic element in the labor force, with strong incentives for success and no village, clan, or established business to fall back on. This helps prevent the embedding of vested interests and brings new ideas and flexibility to the workplace. Here the United States is the classic example.¹² But this argument does not seem to apply well to the workshop countries. South Korea has a relatively large immigrant population (from the north) and this may have been important. It was more the indigenous than the immigrant population that carried the ball in Taiwan, however, and neither Japan nor China has had any influence

of this sort. Increased labor force participation, mostly by women, and rural urban migration are two more demographic factors that increase the elasticity of labor supply and hence prevent labor shortages from constraining growth. Although the first is cultural and relatively insignificant in the region, the second has played an important part in all these countries, as increased industrial pull attracted rural workers and policies raising agricultural productivity freed them for urban employment.

NOTES

1. Liaoning, Jilin, and Heilongjiang.
2. Maritime Krai, Amur Oblast, Khabarovsk Krai, Sakhalin Oblast, Yakut ASSR, Magadan Oblast, Kamchatka Oblast.
3. By now the population should be well over 300 million.
4. This estimate is unadjusted for the portion of exports and imports that are intraregional. Any regional surplus would be subtracted from (and regional deficits added to) the total of the reported GDPs.
5. These are rough estimates based on *World Development Review 1987* (World Bank); *Country Statistics* (U.S. State Department, various numbers, 1987-90); *Chinese Statistical Yearbook*, IPR; and *Soviet-American Handbooks on the Far East*.
6. One important job that badly needs doing if regional economic cooperation is to proceed is to clearly inventory the basic resource and infrastructure situation in the region and the level of technical efficiency of existing productive capacity and to evaluate the minimum changes needed, if any, for success. Until this is done, any statements about the region must be largely conjecture.
7. It is not likely that Japan would ever become a full member of any arrangement calling for preferential treatment of regional goods and services.
8. On the positive side, consumers and producers in the country finally getting the goods will gain. Even if their gain is against government policy it has some positive weight.
9. This project was first discussed at the International Conference on the Economic Development of Northeast Asia, at Changchun, China, July 1990.
10. These may come from other countries or by the redirection of investment in the region for investment outside the region by members (say Japan) of the regional grouping.
11. *World Bank Economic Review*, ERD, 1991.
12. This does not rule out other paths to successful growth. Japan has shown clearly that import substitution under competitive conditions can lead to relatively high growth and upgrade a nation's ability to compete internationally once the growth possibilities of import substitution run out. (In the 1920s Japan was a major exporter of shoddy labor-intensive goods because of Japan's basic comparative advantage in manufacturing after the war Japan moved up to the leading edge technologically and in quality terms partly via import substitution in highly competitive domestic markets.)
13. A lead processing project might be a more appropriate example for Mongolia.
14. Implicit in these comparisons is the answer to what would be the least-cost option for a Tsushima port. That means analyzing the infrastructure requirements of each possibility, includ-

- ing a variety of canal possibilities and their freeze-over periods, the dredging required, the desirability of container facilities at the port or transloading to containers elsewhere, and so forth, until a reasonable economic rate of return can be estimated for each option.
11. The density in Northeast China was estimated by dividing 10 percent of China's total area by the population of Northeast China (giving a result very close to the national density). Source: *The Great World Atlas* (American Map Corporation, 1984) and *World Development Report* (1987).
 12. The Soviet Far East GNP was estimated as equal to the average of Poland, Yugoslavia, and Hungary's per capita income in 1985 of \$2,000 times the 7.1 million population of the Soviet Far East in 1983. From *World Development Report* (1987) and *Soviet-American Horizons on the Pacific*.
 13. Vladimir Ivanov, ed., *USSR and the Pacific Region in the 21st Century*.
 14. Conjecturing about the Soviet Far East, one would guess that with forestry and fishing included in agriculture, the share of agriculture in the GDP would be similar to that of Northeast China and the DPRK. Unlike the other two, however, this reflects a long-run comparative advantage for the Soviet Far East.
 15. *The Great World Atlas*. A similar result is obtained from the tables on mineral production in *World Resources 1988*.
 16. See Alan J. Brown, "Soviet-Japanese Joint Cooperation Resource: A Study in Far East Mineral Development Project."
 17. There are no data available on the former USSR or the Soviet Far East. Assuming that the relative per capita incomes of Japan and the former USSR are roughly comparable to their relative capital/labor ratios, then if the capital/labor ratio in the Soviet Far East is somewhat similar to that of the former USSR, the Soviet Far East should have a capital/labor ratio of about 18 percent of Japan's in 1985, or 2.5%. This assumes that capital is used equally efficiently in the Soviet Far East and Japan, which I doubt, and that the 1985 per/worker, relative/area rates are equilibrium, which I also doubt. Less efficient use would raise the capital/labor ratio in the Soviet Far East and per appreciation—as happened after 1985—would lower it. I would guess, in critical terms, compared to the other areas involved, the present estimate is about right. Capital/labor ratios for the DPRK and Mongolia were estimated in a similar fashion.
 18. This indicates that the physical capital in Northeast China's heavy industry is very old and thus carried at relatively very low original cost compared to the most recently developing parts of China. Source: *Chinese Statistical Yearbook*, 1988.
 19. South Korea's mixers of manufacturing exports is very similar to Japan's, with a much lower capital/labor ratio. South Korea's still relatively limited capital has been directed toward specific sectors to promote an export mix that reflects the country's expected future comparative advantage rather than its current comparative advantage. See L. J. Lau (ed.), *Models of Development: A Comparative Study of Economic Growth in South Korea and Taiwan*, for more on South Korea's development approach.
 20. *Almanac of China's Foreign Economic Relations and Trade 1988*.
 21. See, for example, Robert G. Jensen, et al. (eds.), *Soviet Natural Resources in the World Economy*; and J. J. Stephan and V. R. Chichilance (eds.), *Soviet-American Horizons on the Pacific*.
 22. According to the Japan Economic Research Center, the share of flows of foreign investment into iron and other metals will be halved in 1993 compared to 1986 and the share of flows into intermediate inputs will be cut to 40 percent of its 1986 level. Further reductions in shares of these sectors are predicted by the year 2000. In terms of cumulated direct foreign investment, by 1988, according to the Ministry of Finance of Japan, mining accounted for just 8 percent of the total outstanding and metal manufacturing for only 3 percent. This com-

- parts with the 21 percent share of banking, finance, and insurance and the 45 percent share of all services including banking, finance, and insurance.
21. It is of course also involved in moving capital and plants in industries with a current comparative advantage to industrial countries (and Southeast Asia); based on various publications of the Korean Economic Institute of America, 1989-90.
 22. One benefit of being prepared to participate in the changing world technology is that large amounts of physical capital are not required for many of the new activities—an advantage for those countries with large populations and very low physical capital/labor ratios. Even with a relatively low per capita higher educational effort, China, for example, has the opportunity of acquiring the critical mass of trained people necessary for the new products.
 23. As noted several times, with continued development the comparative advantage of Northeast China and the DPRK would shift somewhat toward heavy industry and so these areas would participate in any regional expansion in the market for machinery and equipment in the long run.
 24. Taiwan shares the Chinese history but has the relatively recent large change in the local/insular competition to contend with. There may be some regional differences in South Korea as well, but the national ethic seems to predominate.
 25. South Korea really got in at the tail end of this phenomenon and prospered most well after the peak was past; Thailand has prospered at a time when most of the claims of increased protectionism began to be aimed.
 26. Most that a large farm population has many of the same characteristics.

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