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**Flying-Geese-Style Comparative Advantage Recycling and Regionally
Clustered Growth: Theoretical Implications of the East Asian Experience**

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(notably core and periphery countries in regional integration)

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ABSTRACT

In accordance with one of the 2002 EIBA conference themes, “Economies at different stages of development (notably core and periphery countries in regional integration),” this paper examines the regional economic agglomeration in East Asia in search of key enabling mechanisms and extracts some theoretical implications for the role of foreign direct investment and trade. It is argued that the East Asian miracle would not have been possible without the special roles played by the US as the major provider of markets and industrial knowledge and by Japan as an industrial upgrading intermediary and as a key capacity augments. These are the key co-determinants of regionally clustered growth in East Asia.

1. Introduction

One of the major themes of the 2002 EIBA Athens conference is “Economies at different stages of development (notably core and periphery countries in regional integration).” This paper zeroes in on this topic by examining the East Asian experiences and extracting theoretical implications for the role of foreign direct investment (FDI) as a regional integrator.

Even though the Asian financial crises of 1997-98 considerably dampened intellectual enthusiasm about and interest in East Asian growth, that region as a whole has recorded unprecedented rapid growth since the end of World War II (WWII). In fact, the crisis-afflicted economies rebounded quickly (except Japan which has been mired in economic stagnation over more than a decade ever since the bursting of the asset bubble of 1987-1990). One dominant explanation for East Asia’s super-growth over the past four decades is that the region adopted outward-oriented, export-focused industrialization (EFI) strategies--in sharp contrast to the

import-substituting industrialization (ISI) approach extensively pursued by Latin America until the late 1980s (except Chile which began to grow quickly once it switched from ISI to EFI in 1976). The general consensus is that EFI is growth-promoting, whereas ISI is growth-stunting.

A strong statistical correlation exists between the rate of growth of exports and that of real GDP (ADB, 1999). This relation is similarly found between “openness”(measured by a trade-GDP ratio on the basis of PPP conversion) and per capita income (World Bank, 2001). Although the results of these statistical studies are suggestive and heuristic, we have a black box problem; they say nothing about (i) the intervening and enabling channels/mechanisms and (ii) the direction of causation (since two-way interactive causality usually prevails), as is typically the case with statistical analyses.

Recently, international flows of FDI has been more and more singled out as a key explanatory variable (a possible intervening channel) in connection with East Asia’s rapid growth, which the World Bank (1993) called “the East Asian Miracle.” East Asian economies have attracted the lion’s share of total FDI to developing countries and consequently come to possess higher inward FDI stocks than other developing regions. In 1996, for example, the nine fast-growing East Asian economies had, on average, an inward-FDI-stock-to-GDP ratio of 27.6 percent, compared to an average of 14.4 percent for all developing countries (UNCTAD, 1998). Here it is worth emphasizing that by conceptualizing the East Asian Miracle as a regional phenomenon, the World Bank recognized, if not explicitly but implicitly, a *regional economic agglomeration* specifically endemic to East Asia.

Multivariate analyses of growth have demonstrated that increased trade and FDI have been central to rapid growth in East Asia (Harrison, 1996). Using data for 11 economies in East Asia

and Latin America, Zhang (2001) found that “although FDI is expected to boost host economic growth, it is shown that the extent to which FDI is growth-enhancing appears to depend on country-specific characteristics”(such as liberalized trade regime, improved education and human capital conditions, export-oriented FDI, and macroeconomic stability).

Although FDI is thus strongly identified as an important explanatory factor, it is still uncertain *why* and *through what mechanisms* inward FDI stimulates growth, whenever it coincides with some favorable country-specific characteristics. The ordinary casual explanation is that FDI accompanies transfers of superior technology, management, access to overseas markets, and access to world money and capital markets. But is this firm-level (microeconomic) explanation alone does not elucidate the dynamic macro-structural linkage between FDI and growth, especially for a regionally clustered growth as seen in East Asia. In other words, *why have FDI and rapid growth been regionally clustered so intensively in the world’s particular region, East Asia—and, more than in any other developing region?*

The purpose of this paper is to provide a conceptual framework, within which the dynamics of FDI-led intra-regional growth agglomeration in East Asia can be examined/interpreted and new theoretical implications be extracted for the role of two major types of international business: FDI and trade. It will also be assessed if the East Asian experiences can be duplicated in other regions such as Eastern and Central Europe.

In this connection it should be noted that much study has recently been made of subnational (intra-country) regional clusters or “microregions” (Piore and Sabel, 1984; Porter, 1990, Krugman, 1991, Markusen, 1996, Nachum, 1990; Dunning 2000). But surprisingly, little has been said and understood of the phenomenon of supranational (cross-border) growth clusters as

another form of economic agglomeration as it is evidenced in East Asia's regional growth.

The leitmotif of this paper is that it is impossible to explain East Asian industrial agglomeration without considering the special roles played by the United States as the leader (hegemon) of the Pax Americana and Japan as a critical industrial upgrading intermediary and a capacity augments via comparative advantage recycling. The latter's role has particularly been crucial in clustering growth in that particular part of the world, and the NIEs (Hong Kong, Singapore, South Korea, and Taiwan) have in turn stepped in and begun to duplicate Japan's role in growth dissemination, thereby reinforcing the regionally clustered growth.

2. Hegemon-led Macro-clustering

So, what is the global environment in which FDI and trade play such eminent roles as engines of growth in East Asia? In the first place, the role of the U.S. as the hegemon of market capitalism needs to be recognized in explaining the East Asian miracle. The World Bank study (1993) focused only on the individual economies' internal policies and institutions and did neither refer to nor stress *the favorable global economic environment created by the Pax Americana* (especially during the postwar golden age of capitalism of 1950-1971 but also generally up to the present), the very external environment that made the individual economies' outward-oriented policies and institutions effective.

In a nut shell, the Pax Americana constitutes an economic system of what may be called "hegemon-led macro-clustering," which is an extended outcome of Pax-Britannica-led macro-clustering (Ozawa, 2003). Macro-clustering is *a phenomenon in which a hegemon economy propagates growth stimuli to its closely aligned cohort of countries, which are at lower stages of development and structural upgrading*. The growth stimuli include the dissemination of

technology, knowledge, skills, market information, demand (via access to the hegemon's home markets), and above all, growth-inducing *institutional* arrangements of open market capitalism through the medium of trade, FDI, and other forms of international business. This all contributes to the higher levels of labor productivity and efficiency, hence rapid growth. The low-echelon countries can “free ride” and thrive on these stimuli. In other words, there is what may be called “economies of hierarchical concatenation” that the follower countries can reap from the forces of hegemon-led macro-clustering, so long as they are capable of formulating and executing suitable public policies in a judicious manner.

The East Asian growth has basically been a region-wide type of economic agglomeration or a regionalized endogenous growth, in which cross-border trade and investment are fundamentally market-driven (profit-motivated and guided), though individual countries, especially those lower-echelon ones, are usually involved in market-enhancing *dirigiste* catch-up strategies. Put it simply, a hierarchy of countries led by a lead country matters—and matters a lot for regional economic growth in general—and for individual countries' economic development in particular.

3. Evolutionary Patterns of Trade and Investment

The patterns of trade and investment relationship between the West (the U.S. and Europe) on one hand and East Asian countries on the other have evolved swiftly and dramatically since the end of WWII. This evolutionary unfolding needs to be briefly sketched out in order to understand the nature of the region's experiences with FDI and trade as growth facilitators.

Phase I (roughly 1950s and mid-1960s): This period was basically the postwar golden age of capitalism (1950-1971) when exchange rate stability was maintained and capital controls were permitted. Japan started its successful catch-up growth by restricting imports and inward FDI in

order to build up national (not foreign-owned) domestic industries. And this dirigisme was tolerated by the US in the wake of the Cold War. Japan imported raw materials/natural resources mostly from other Asian countries, processed them into manufactures, and exported them (early on, for example, labor-intensive textiles and apparel) to the West. The West provided hard-currency markets, while the rest of Asia raw materials. Proto-NIEs (Singapore, Hong Kong, Taiwan, South Korea) had been engaged mostly in ISI until the mid-1960s.

Phase II (from mid-1960s to 1980s): Because of the rapid industrial upgrading in Japan, and the adoption of EFI in the NIEs, Japan began to make foreign direct investment (FDI) in neighboring countries, i.e., in the NIEs in particular but also in ASEAN-4 (Thailand, Malaysia, Indonesia, and the Philippines). Consequently, as detailed below, the phenomenon of “comparative advantage recycling” (Ozawa, 1993; UNCTAD 1995) ensued, and the region began to register rapid growth. Comparative advantages in labor-intensive manufactures started to be recycled/relayed from Japan, first to the NIEs and then to the ASEAN-4. The EFI strategy adopted by East Asia’s rapidly growing countries proved to be heavily supported by imports of capital goods and key industrial supplies—to such an extent that the strategy was actually an “import- and export-led growth” paradigm (Klien, 1990; Dutta, 2000)-- instead of being merely “export-led.” And FDI, both outward and inward, in the Pacific region thus became a crucial catalyst for regionally clustered growth, with important theoretical implications for the role of FDI as a growth catalyst. China still remained “contained” by the Free World until 1987.

Phase III (from 1990s onward): The information technology (IT) revolution first occurred most successfully in the United States and spread quickly globally, particularly during the latter half of the 1990s. And practically all East Asian economies (Japan, the NIEs, and the ASEAN-4)

became major suppliers of IT-related electronics goods for the U.S. market. Also, with an amazing speed, China, which initially concentrated on labor-intensive light industry manufactures (such apparel and shoes), quickly moved into the low-to-mid-end segments of electronics hardware and software. China's emergence as a high-growth economy is now considered both an opportunity for further regional agglomeration and a competitive threat (or prod) to neighboring economies in particular—but also for the rest of the world..

4. Logic/Theory of Comparative Advantage Recycling

East Asia is credited for an effective use of EFI policy, along with other complementary policies, in order to get the fundamentals right by way of (i) carefully limited and market-compatible government activism, (ii) strong export orientation, (iii) high levels of domestic savings, (iv) accumulation of human and physical capital, (v) good macroeconomic management, (vi) acquisition of technology through openness to direct foreign investment and licensing, (vii) flexible labor markets, and (viii) shared growth (World bank, 1993).. But these public policies adopted by the region's countries proved effective *because of* the willingness of the West, especially the U.S., to disseminate growth stimuli overseas, especially by providing technology, management, and capital through overseas investments and by absorbing manufactured goods in their import markets. In this respect, the U.S. has been the major provider of *demand* (markets) for East Asia, with the latter enjoying huge trade surpluses.

4.1. U.S. as the major market (demand) provider

One aspect of this U.S. trade relations with East Asia is illustrated in Figure 1, Japan (JLAB) was the first economy which captured the U.S. markets for labor-intensive goods (SITC 65, 66, 81, 82, 83, 84, 85), initially 25 percent in 1962. But the Japanese share steadily declined to only

2 percent in 1997. In the meantime, the NIEs share (NLAB) started to rise from 1.5 percent in 1962, topped out at 40 percent in 1983, and then quickly fell to 10 percent in 1997. ASEAN-4's share (ALAB) only slowly rose but was soon taken over by China (CLAB), which captured 25 percent in 1997, the same share initially enjoyed by Japan in the early 1960s (Cutler, Berri, and Ozawa, 2002). This clearly demonstrates *how Japan's share in the U.S. market for labor intensive imports has been passed along down the East Asian hierarchy of economies, first to the NIEs, then, to ASEAN-4, and most recently to China—hence, the phenomenon of comparative advantage recycling.*

INSERT FIGURE 1 HERE

And similar patterns of comparative advantage also started to be observable in more capital-intensive goods such as iron & steel, metal manufactures, and electric machinery (Berri and Ozawa, 1997).

4.2. Japan as an industrial (comparative advantage) recycle facilitator

But *why such an effective market recycling among the East Asian countries?* This reflects a quickly changing pattern of comparative advantage which is associated with its corresponding changes in the industrial structure of the countries involved. Japan was the first to initiate this rapid process of industrial upgrading. It quickly climbed up the ladder of industry, stage by stage, first from labor-intensive industries (e.g., textiles) (from 1950 to mid-1960s) and scale-driven industries (steel) (from late 1950s to early 1970s) to assembly-based industries (automobiles) (from late 1960 onward), to R&D-based industries (computers and microchips) (from mid-1980s to the present)—and finally to IT-based industries (the Internet) (mid-1990s

onward)—all along the path of industrial upgrading trodden by the West.¹

In each sequential stage of industrial upgrading (except the latest IT-based industries which are still inchoate in development), Japan has emerged as the world's formidable exporters capturing large market shares in the world economy, as witnessed initially in textiles, then in steel, later in cars and consumer electronics. But in each captured market Japan has not been able to retain competitiveness for long. Two basic *built-in self-destructive* mechanisms are involved: (i) inevitable rises in wages and (ii) a sharp appreciation of the yen. In fact, the more successful Japan has been in climbing up the ladder of industrial upgrading, the stronger these self-altering mechanisms.

As a consequence, Japan's step-by-step industrial upgrading has had an enormous impact on the industrialization pattern of other East Asian countries. As Japan lost comparative advantages in low-productivity tiers of industry or low-end goods at each tier, it transplanted via FDI those disadvantaged industries or activities to other Asian economies (first to the NIEs, then to ASEAN-4, and most recently to China) where they are still able to produce competitively because of relatively low wages.

What made the region so vibrant, moreover, is that the NIEs themselves *in turn* began to shift

¹These five tiers of growth, each led by some leading industry as the main engine of development, are identified as (i) "Heckscher-Ohlin"endowed asset-based industries, (ii) "nondifferentiated Smithian" scale-driven industries, (iii) "differentiated Smithian" assembly-based industries, (iv) "Schumpetrian" innovation-led industries, and (v) "McLuhan" information-technology-enabled industries (Ozawa, 2001).

their quickly comparatively disadvantaged industries to the lower-echelon countries--first to ASEAN-4 but now increasingly to China. Consequently, in each round of industrial transplantation, the host country's exports and output will increase. (In this regard, this is the prime example and mechanism of "trade as aid," which is a privatized form of foreign economic aid).

Here, it is worth noting that when a country loses a comparative/competitive advantage in a particular activity, two types of assets/resources are released from the contracting sector: (i) those readily transferable to the expanding sector (namely, homogeneous, nonsector-specific resources, such as land and labor); and (ii) those specific to the contracting sector and, therefore, nontransferable to the expanding sector (for example, industry/firm-specific technology, knowledge, and experiences). Most resources of the first type, however, are nontransferable to other countries because of institutional or physical constraints. On the other hand, the second type of resources released will be actually wasted at home unless they are transferred to and employed in other countries where such industry/firm-specific resources are needed to develop comparatively advantaged industries. Hence, comparative advantage recycling reflects an FDI-mediated recycling of productive resources/assets which otherwise would be simply wasted at home. Through this mechanism, the resources released from the contracting sector at home are reused (instead of being left unused) and transformed into dividends from FDI operations. The end result is a rise in output and economic welfare.

Aside from the investing (home) country's point of view, the host countries can grow faster thanks to the same mechanism for two major reasons: (i) the inflows of technology and other sector-specific resources will spark and magnify the host country's comparative advantage.

This is the “trade-augmentation” effect of FDI (Kojima and Ozawa, 1984); and (ii) the demands (markets) needed by the newly created or strengthened export industries in the host countries are guaranteed by the home country which loses comparative advantage and therefore now imports.

In this regards, EFI (export-focused industrialization) is a misnomer, since the host countries are necessarily *importing* the critical sector-specific technology and capital goods, which enable them to develop exports quickly and earn foreign exchange (hard currency); this in turn assures the investing foreign multinationals for profit repatriation—hence, a paradigm of “import- and export-led growth, ” as mentioned earlier.

4.3. Japan as a key capacity augementer

In fact, Japan has become the most significant supplier of industrial inputs for other Asian economies, particularly in assembly-based industries such as electronics and automobiles. For instance, Park and Park (1991:93) makes a pertinent observation:

[The NIEs] have relied on Japan as their main supplier of capital and intermediate goods... Almost 80 percent of [their] imports from Japan in the 1980s included capital- and technology-intensive manufactures. This dependence on Japan for capital and technology has increased in recent years. In 1987, [the NIEs] obtained from Japan almost 50 percent of their total imports of technology-intensive manufactures (up from about 41 percent in 1980) as compared to 26 percent from the United States.

Similarly, Thurow (1996: 207) observes:

On the Pacific Rim, countries run big trade deficits with Japan, which they finance out of their trade surplus with the United States... China’s 1995 trade surplus with Japan is ... misleading since it sells Japanese components that are installed on products that are exported to Europe and America.

In short, then, it is not amiss to argue that without Japan as a capacity augementer--via provision of capital goods, inputs, and technology most often in connection with Japanese multinationals’ investments, other Asian economies could not have been able to develop export

competitiveness in such assembly-based industries.

Yet the developing host countries are not likely to merely remain as final assemblers forever. They will eventually move into local production of those capital goods and intermediate inputs once imported by way of “import substitution.” “Import- and export-led” growth thus eventually (and almost ineluctably) turns into the “import substitution and local production” phase for intermediate goods. In fact, this process itself is “encouraged” by the suppliers of capital goods and intermediate inputs themselves once they began to shift overseas and locate the production of intermediate goods in close proximity to their major customers which now produce abroad. For example, Toyota’s or Honda’s assembly operations, say, in Thailand and China are increasingly accompanied by localization of parts production in those host countries. And these parent companies at home themselves are procuring overseas and importing foreign-made parts. In other words, not only final assembling operations but also production of some capital goods and intermediate inputs are destined to move out of the home country to the host countries.

The upshot is the phenomenon of so-called “production process fragmentation” across borders (inter alia, Jones, 2000). Vertical production is fragmented “in the sense that a final manufactured good will consist of parts that have been manufactured in a variety of different countries” (Bond, 2001). The phenomenon of fragmentation is thus an outcome of comparative advantage recycling, which fosters regionalized cluster growth in East Asia..

The pattern of comparative advantage recycling based on the “import-supported export drive” in the follower geese economies is summarized in Figure 2.

*** INSERT FIGURE 2 HERE***

5. The Krugman and the Sachs Puzzles

Widely cited is Paul Krugman's (1994) observation about the East Asian miracle. He argued that the fast growth could be characterized as "input-driven," but not as TFP (efficiency)-driven. Measurable factor inputs of capital and labor, education, and structural change can explain it, just as the former Soviet Union once succeeded in rapid growth when it mobilized workers and capital. But Soviet's input-driven growth soon encountered a slow and stagnated growth (that is, fell victim to the law of diminishing returns). Hence, he predicted that East Asia would likewise meet the same fate eventually, and contended that there is no need to invoke any special mechanisms—or such as a miracle—to account for the high rates of growth.

In a follow-up article (Krugman, 1997), replacing "input-driven" by "perspiration," and "efficiency" by "inspiration," he argued:

If there is one thing that believers in an Asian system admire, it is the way Asian governments promote specific industries and technologies; this is supposed to explain their economies' soaring efficiency. But if you conclude that it is mainly perspiration—that efficiency is not soaring—then the brilliance of Asian industrial policies becomes a lot less obvious. The other unwelcome implication of the perspiration theory was that the pace of Asia's growth was likely to slow (p. 27).

Krugman's view is, however, in line with the neoclassical canon of growth that emphasizes inputs and capital accumulation, and treats technological progress as *exogenous* (that is, like manna from Heaven). Besides, perspiration is *exactly* what developing countries really need to lift their standard of living; it is nothing to be ashamed of! It is indeed their perspirations that made Singapore's and Hong Kong's per capita income higher than that of their former "mother" country, England (at least in terms of the World Bank's official statistics). Inspiration is needed in any country, but especially in advanced countries since they can no longer count on perspiration.

Reacting to Krugman's observation, Sachs (1995) counter-argued that unlike the Soviet

Union, Singapore is highly export-oriented and its continuous high investment (nearly 40% of GDP) has shown no sign of diminishing returns (as cited in Rodrigo, 2001).

The questions raised by these two noted economists are: (i) whether technological progress in East Asia is really exogenous and not endogenous; and (ii) why Singapore—for that matter, other NIEs-- has been so much export-efficient and able to maintain such a high level of investment year after year. The concept and logic of comparative advantage recycling explored above can easily answer these questions. *Technological progress in the Pacific rim (inclusive of the U.S.) has been regionally endogenous, in the sense that Japan introduced a large number of significant improvements in initially Western, imported products and production processes and these “renovated” technologies (often embodied in capital goods and intermediate inputs) have been relayed to other Asian economies during the course of comparative advantage recycling.* And Singapore’s –and other NIEs’--high rates of investment stems from large inflows of FDI (inward FDI as a percentage of gross fixed capital formation for 1989-1994, for example, was as high as 30.3 percent on average: UNCTAD, 2001). Thus, FDI and FDI-augmented trade as the critical mechanisms of comparative advantage recycling have been clearly the key determinants of regionally clustered growth (or endogenous growth).

6. Conclusions (tentative and unfinished)

All the economies in the world are, whether they like it or not, ineluctably under the forces of open market capitalism unleashed under the Pax Americana. But why has rapid industrialization and growth so far been concentrated so intensively in East Asia? The answer is that East Asia has been blessed, first of all, by the presence of the U.S., the hegemon of the post-WWII global economic system, which is the major provider of industrial knowledge and markets, especially

early on in the wake of the Cold War—and secondly, by the roles of Japan as a structural intermediary and as a capacity augments, the roles which the NIEs themselves have in turn recently begun to play. The existence of these robust secondary geese and the lower-echelon (follower) geese’s eagerness to exploit the favorable external environment with a lot of “perspiration” are what has made a regionally clustered growth possible in, and endemic to, East Asia.

Is the East Asian case so unique that a similar clustered growth cannot be replicated in other regions such as Central and Eastern Europe? (Yet to be explained.)

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