

"The Conceptual Framework on Japanese Technology Transfer and Economic Development in ASEAN Countries"**

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Introduction

The growth mechanism of the world economy is , now, changing by moving the relative importance from U.S.-Europe to Asia. The real rate of economic growth of the former is about 2%, while the latter's is about 5.5% in the same period of 1964 ~ 1987. The higher growth of Asia has largely depended on the U.S.-European free market in the long time. So, the Asian growth mechanism is requested to reorganize it so as to contribute to the revitalization of the world economy and to restructuring toward sound interdependence with U.S.-Europe, while to strengthen her self-reliance.

Main purposes of this paper are ,first, to analyse the trend and the development of technology transfer in Asian countries, and in connection with this, second, to propose some policies for making new linkages among leading areas in Asia from viewpoints of Asian economic development and peace useful for restructuring a new growth mechanism of the world economy.

East Asia now receives keener international attention due to its countries' economic growth, a driving force in today's world economy. This area is characterized by diversity and high growth. I would like to describe an economic vision of East Asia toward the 21st century by taking into consideration the direction of growth, problems that will be faced in the future at different

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development stages. By vision I mean an analytical forecast on important issues that are not clearly comprehended yet. The span of the vision in this context extends from 10 to 15 years.

I should like to give this talk in four parts. The first part deals with a development vision of the East Asian region. The second part concerns Japanese technology transfer and economic development mechanism in related to Asian economic development. the third part describes theory and policy for establishing the Asian Development Corridor (ADC) which is able to promote the technology transfer among linked nations. Finally, I expound the establishment of a diffusion mechanism of the spiral national development to another areas by using ADC.

I. Vision of East Asia Toward the 21st Century

What is the basic nature of the revolutionary tide in East Asia? I would like to choose three most relevant trends of the world and those of East Asia.

In terms of the world trend, first and foremost, I would like to stress the advancement of the information-intensive society. The information-intensive society can be described as society in which performance of various social functions largely depend on a highly advanced information network and information system by means of electronics, satellite communication, as well as computers. For example, in Japan most of the newly constructed large-scale buildings are so-called intelligent buildings, which are equipped with highly advanced information communication systems. In this information-intensive society, intelligent buildings are indispensable, establishing channels with international financial centers and international business centers. It is expected that many capital cities in NIEs and ASEAN countries will be involved in highly advanced information systems on a global scale in the near future.

Second, I would like to take the issue of the advancement of a borderless economy. The advent of rapid technological innovation in the field of communication has activated and facilitated international migration of capital, labor, technology, and information in addition to traditional trade. The enhanced mobility in these production elements on a global scale has contributed largely to the development of multinational companies. In due course, the borderless economy will create more international business opportunities. As a matter of fact, the highest growth rate in recent years is always marked by a multinational company of NIEs.

Third, I would like to point out the advent of the Age of Science and Technology-intensive Societies. Nowadays, the decisive factor of competition among countries and companies is shifting from capital to technology. Keen competition among companies is most apparent in connection with technology, not with capital. Science and technology are highly regarded to play a central role in solving various problems facing people, society, and countries today. In his newly published book, Prof. Galbraith stresses the advent of "the age of pragmatism". "The science and technology intensive society", which I mentioned earlier, and "the age of pragmatism" described by Prof. Galbraith are closely related, attaching greater importance to scientific and technological ways of thinking and action. from an "improvement trading nation" to a "technological nation." This trend is being followed by Korea and Taiwan. Also, China is placing great importance on technological innovation in realizing its "four modernization programs in connection with agriculture, industry, military, and science & technology". Thus, most countries in East Asia are vigorously promoting technological innovation and transfer as the central axis of their development strategy.

Fourth, the East Asian economy is playing more and more important roles as a growth center of the world economy. The driving force of world economic growth is now shifting from the West to Asia. A comparison of the growth rate of per capita

GNP from 1965 to 1988 of major areas is as follows: 1.6% in the U.S.A., 2.3% in the EC, 6.7% in East Asia and the NIEs, 4% in ASEAN, 4.3% in Japan, and 5.4% in China. This shows that the growth rate in East Asia is more than twice than that of the developed countries, like the U.S.A and countries in Europe. Even after entering the age of lower growth in 1973 due to the oil shock, the East Asian economy was able to maintain a high growth rate.

Fifth, I would like to mention that policies to follow Western experience in East Asia have been shifted to follow Eastern experience, a "Look East Policy". Since Prime Minister Mahathir of Malaysia first advocated the "Look East Policy" in 1981, cooperative ties among East Asian nations have been strengthened. Prime Minister Mahathir also advocated organizing the East Asia Economic Cooperation Group(EAEG).

The "Look East Policy" was emerged from the following background: Advancement of protectionism and regionalism in the U.S.A. and Europe, limit to dependence on the U.S.A. and Europe; a strong desire among East Asian nations to be economically independent; strengthened ties among nations in the Asian Growth Belt such as the NIEs, ASEAN, and Japan, which play increasingly important roles in the world economy; and the development of regional communication technology.

Sixth, the advancement of newly diversified reorganization of the East Asian economy can be pointed out. Since the end of World War II until recently, there had been no active economic exchanges between free market economies and socialist economies due to the political confrontation. The Malta Congress held between leaders of the U.S.A. and the USSR in 1989 removed the pressure developed by east and west hegemonies and further accelerated economic exchanges between both areas.

If the East Asian economies change to a new development system using the new paradigm, the method of bridging the Development Corridor toward the economic area of around in the center of the Asia Growth Belt will be effective, as I mentioned before. If you want to develop all the East Asian economies more rapidly than by this method, you can get it by adding the method of distributing the development resources such as capital, technology, information and market for the countries which need those resources.

Generally speaking, like Asia which has variety and various classes and ranks, it is not only difficult but also not effective to establishing a hard area community. However the international cooperation for mutual development is necessary. The soft area cooperation is possible and that will be used more effectively. When making an effective area cooperative project, it is useful to have the group development as a theoretical base.

Based on the above mentioned new paradigm, what kind of vision can we have for the East Asian economies?

First of all, in the process toward the independence and anonymous orientation in all of East Asian economies, the Asia Growth Belt of that center will change structurally from a reception type and a dispatch type. In order to do so, two points are important. One is the development and expansion of an effective demand in the area and the other is the forming a healthy mutual dependent structure. Especially it is important that Japan plays the role not only as a supply center of capital and technology but also a market provider. It is difficult for Japan only to play the role of market provider toward all of East Asia. It is necessary that all the countries cooperate. It is judged that already the NIEs have reached the level of advanced countries and soon after the ASEAN countries will follow. If communication can be established which enable the dynamism of the Asia growth Belt toward countries

around it, it is very useful for the forming of an East Asia independent economic development system.

Secondly, the East Asia economy in terms of economic scale in about 20 years from now, will become one of three biggest economic centers in the world economy together with the North America cooperative market and the EC. Of course in order to do so it is a prior condition that the free market economy system in East Asia develops healthily. In order to improve, expand and develop the free market economic system, the fair competition, harmonization and symbiosis are always important. Effectively answering the negative issues such as avoiding the stalling of the high growth, solution of the issue on the trade-off between development and environment, the minimization of the growth difference in the area is also inevitable. In addition to these I think the energy issue will become a serious issue in East Asia of the 21st century.

Thirdly, if a multi-national company's area of activity is to expand, shift from a single country entrepreneur to an international entrepreneur, as well as the borderless economy in the company's activities a global entrepreneur is required. In order to exchange each country's corporate culture and create an international business opportunity, the role of an international corporate network is important.

Especially in the socialistic economy, the corporate bureaucracy has grown but the entrepreneur and special business manager has not completely grown. Even though socialistic economies failed it is difficult to quickly change to a free market economy. Even if it is easy to transfer physical technology it takes a long time to transfer the broad meaning of cooperative culture including entrepreneurship and management know-how.

Fourthly, the international corporate ethics tends to become more important. Corporate social responsibility is required even internationally, the companies

should plan the social restoration of profit. Harmonization of social philosophy and corporate philosophy should be required all the time. Of course the company which acts multi-nationally is required to be "good citizen company" in each area where they do business in overseas. In all the cases they are management morals and spiritual aspects of business activities such as obedience of law and fulfillment of contract and trust. However as recent economy and social influences of multi-national companies have been growing, the technological aspects such as high level and high technology of production has been advancing, it becomes important to have social responsibility and proper use of technology in the corporate ethics.

II. Technology Transfer and Foreign Direct Investment in Asian Countries

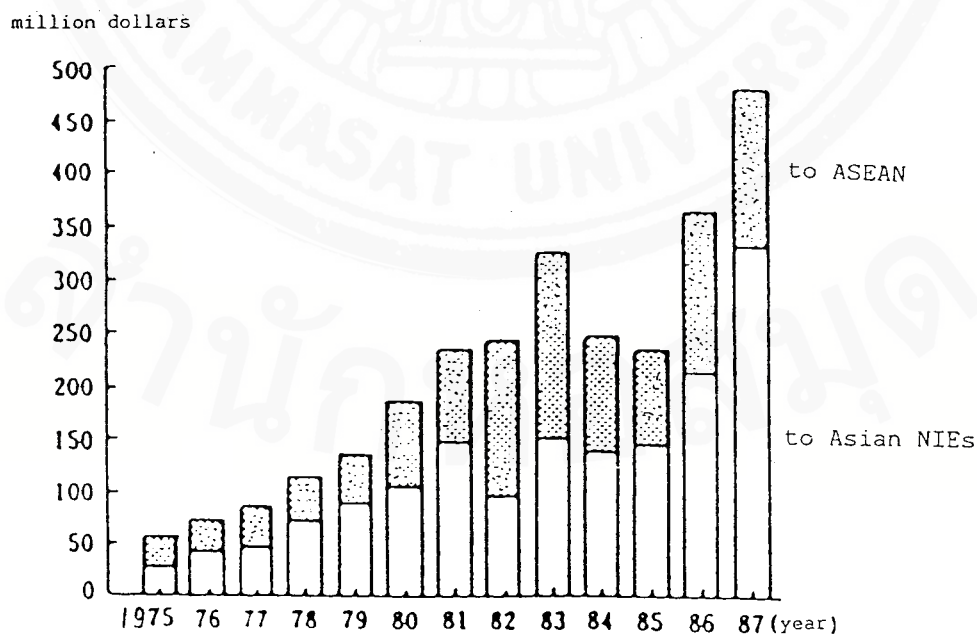
Many Asian countries are, now, in the process of social change from the industrializing society to the information society by such big technological revolutions as microelectronics revolution, informatics revolution, energy revolution, raw materials revolution and so on. Those technological revolutions are changing the structures of international division of labour, FDI, technology transfer, and economic development. Trade, technology transfer, and FDI are fundamental importance for international diffusion of economic development among countries. From the analysis of developments and structures of them in Asia, it can be said that the economic growth has been greater in East Asia (east, south-east) than West Asia (west, south-west), because of more favorable allocation of them to East Asia. We are also necessary to mention that there are both free market economies and socialist/mixed economies in Asia, and it is able to expect that trade, technology transfer and FDI between both economies would be increasing more and more as progress world East-West détente and as

cultivate better perception of the principle of coexistence and coprosperity each other.

Technological innovation is rising more and more importance in international competitiveness and economic development. International transfer of innovation is able to diffuse economic development to another countries and to decrease gaps in economic development. Generally speaking, after World War II, it is true that Asia has rapidly absorbed industrial innovations from U.S.-Europe and achieved higher economic growth. But there are also such stagnant countries as LLDCs in Asia. The number of cases of technology transfer is largely different from country to country. It can be said that the trade in technologies has converged upon rapidly growing areas such as Japan, Asian NIEs, and ASEAN member countries, as shown in Figure 1.

New trend and development of technology transfer in Asia are as follows,

Figure 1 Technological Exports of Japan to Asian NIEs and ASEAN



Source: White Paper on Trade and Industry, MITI, Japan

Table 1
Technological Balance of Payments by Country

(単位 億円, 100 million yen)

F. Y.	Receipts										Ratio (%)	Ratio to preceding year
	1980 55('80)	56('81)	57('82)	58('83)	59('84)	60('85)	61('86)	62('87)	63('88)	元('89)		
Country	542.18	679.04	707.67	1 019.20	1 125.16	875.23	864.81	864.35	1 014.12	1 288.62	100.0	1.27
Asia, excl.												
West Asia	76	108	148	158	136	94	152	85	103	108.75	8.4	1.06
Indonesia	53	95	75	170	149	182	211	275	306	364.50	29.8	1.26
Korea	194	168	142	292	431	343	282	217	216	243.86	18.9	1.13
China	99	120	97	108	100	79	85	123	132	162.52	12.6	1.23
Taiwan	35	14	23	135	6	7	6	20	17	21.95	1.9	1.45
Philippines	42	50	56	61	83	62	54	73	99	176.51	13.7	1.78
Thailand	81	121	71	78	91	61	48	66	121	160.99	12.5	1.33
Singapore	15	33	146	68	50	44	32	31	40			
West Asia	244.13	101.57	56.97	173.00	307.83	141.13	104.85	15.96	22.77	23.60	1.8	1.04
North America												
U. S. A.	295.01 221	383.26 326	408.19 356	600.34 536	719.15 659	587.40 518	622.88 577	725.02 659	769.76 711	1 151.36 1 077.37	89.3 83.6	1.50 1.52
South America												
Brazil	108.42 69	117.70 74	108.03 73	100.68 79	36.54 19	87.40 33	51.61 38	44.60 25	44.43 25	45.80 32.56	3.6 2.5	1.03 1.31
Europe												
U. K.	290.46 21	321.49 26	389.63 84	370.53 53	407.07 68	454.61 53	435.98 76	402.61 106	492.62 139	650.57 199.95	50.5 15.5	1.32 1.44
Italy	37	45	88	73	57	51	72	37	48	39.31	166.6	0.82
F. R. G.	34	29	47	51	47	113	78	74	107	137.02	299.2	1.28
France	23	45	39	45	46	48	59	52	44	71.37	11.0	1.62
U. S. S. R.	48	24	20	19	11	24	4	27	-	88.83	7.7	1.97
Oceania-Africa												
Australia	115.91 27	148.00 45	178.71 46	145.13 31	179.36 41	196.44 119	160.65 58	103.29 42	118.84 52	133.43 56.93	10.4 42.7	1.12 1.09
Total	1 596.12	1 751.06	1 849.21	2 408.87	2 775.12	2 342.20	2 240.78	2 155.75	2 462.55	3 293.48	255.6	1.34

Table 2

Technological Balance of Payments by Country

Payments		(単位: 億円, 100 million yen)									
F.Y.	1980 55('80)	56('81)	57('82)	58('83)	59('84)	60('85)	61('86)	62('87)	63('88)	元('89)	Ratio % year
Country											
North America											
U. S. A.	1 568.62 1 538	1 739.01 1 718	1 885.61 1 870	1 940.00 1 911	1 939.89 1 930	2 102.79 2 086	1 745.51 1 738	1 792.51 1 786	1 981.27 1 969	2 107.41 2 094.86	100.0 99.4
Europe											
U. K.	821.27 202	844.25 180	926.62 250	844.99 147	866.98 132	815.67 146	851.37 130	1 034.17 103	1 136.02 93	1 181.63 108.42	56.1 5.1
Italy	13	17	18	12	48	15	22	12	23	35.24	1.2
Netherlands	63	100	127	113	141	155	156	208	276	210.52	10.0
Switzerland	155	154	157	159	160	163	175	174	184	190.39	9.0
F. R. G.	205	189	178	196	178	176	207	214	184	242.57	11.5
France	111	103	109	114	104	68	73	221	262	255.36	12.1
Other area	5.40	13.06	13.90	7.81	7.60	13.27	8.88	5.78	4.65	10.20	0.5
Total	2 395.29	2 596.32	2 826.13	2 792.80	2 814.47	2 931.73	2 605.77	2 832.45	3 121.95	3 299.25	156.6

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Table 3 Foreign Direct Investments from Asian NIEs
to Main ASEAN Member Countries

million dollars, (%)

Investor \ Recipient	Malaysia	Thailand	Indonesia	Philippines
Taiwan	34.6(8.1) 98.5(13.2) 384.3(19.1)	1.7(1.5) 59.9(18.5) 97.0(10.3)	17.3(2.2) 7.9(0.6) 914.1(22.7)	0.4(0.5) 9.0(5.4) 106.8(26.7)
Korea	2.1(0.5) 9.0(1.2) 23.3(1.2)	0.2(0.1) 4.2(1.3) 11.9(1.3)	21.5(2.7) 15.5(1.3) 82.1(2.0)	0.0(0.0) 0.7(0.4) 0.5(0.1)
Hong Kong	22.5(5.3) 11.8(1.6) 129.5(6.4)	8.7(7.3) 13.6(4.2) 23.6(2.5)	▲59.8(-) 122.1(9.8) 228.2(5.7)	7.3(9.4) 22.8(13.7) 23.2(5.8)
Singapore	42.0(9.8) 135.0(18.1) 172.1(8.6)	3.7(3.1) 2.1(0.6) 13.7(1.4)	105.3(13.2) 12.9(1.0) 149.0(3.7)	0.3(0.3) 0.9(0.5) 2.0(0.5)
Asian NIES total	101.3(23.7) 254.3(34.1) 709.3(35.3)	14.3(12.0) 79.8(24.7) 146.2(15.5)	84.3(10.5) 158.4(12.8) 1,373.4(34.1)	8.0(10.2) 33.5(20.1) 132.5(33.1)
Japan	67.6(15.8) 185.0(24.8) 561.1(27.9)	63.7(53.4) 140.1(43.3) 535.0(56.6)	324.6(40.6) 512.1(41.3) 233.4(5.6)	22.3(28.5) 28.8(17.3) 105.9(26.4)
U.S.A.	12.5(2.9) 71.1(9.5) 252.6(12.6)	5.4(4.6) 22.3(6.9) 61.2(6.5)	128.4(16.0) ▲62.0() 669.2(16.6)	22.4(28.7) 36.0(21.6) 104.1(26.0)
World Total	427.9(100) 745.5(100) 2010.5(100)	119.4(100) 323.4(100) 944.5(100)	800.4(100) 1,239.7(100) 4,022.7(100)	78.2(100) 166.6(100) 400.5(100)

upper=1986, middle=1987, bottom=1988.

in the figures of 1988, Jan. - Sept. in Malaysia and Thailand.
Jan. - Nov. in Indonesia and Philippines.

the figures in () are the shares of total amount.

Source: White Paper on Trade and Industry, MITI

- (1) diversification of transfer needs of technologies, such as high tech, software technologies, informatic technologies and so on
- (2) technological needs requested for bringing up supporting industries including small & medium scale industries
- (3) technological needs requested for the pollution prevention
- (4) diversification of channels of technology transfer, Asian NIEs → another developing countries, besides developed country → developing country
- (5) a rising tendency of desiring the patent licensing and imports of the high-tech precision machines besides or than FDI in transfer of technology, in Asian NIEs
- (6) more active behaviour of multinational companies (MNCs) in the transfer of technology, to countries they want to develop new locations of production in the process of reorganizing their international division of labour
- (7) more actively using technology transfer strategies by MNCs, which are necessary to take more effective global management.

In micro-economy, main successive factors in technology transfer are as follows, 1) good communication between transferor and transferee, and effective information system, 2) mutual trust, 3) research & development abilities, 4) innovativeness (innovative behavior, innovative organization, innovative management), 5) coupling of innovation and entrepreneurship.

New trend and development of FDI in Asia are as follows,

- ① increasing new FDI for reorganizing international division of labour and for establishing new industries such as software industries and new service industries by MNCs in Asia
- ② increasing new FDI of technology intensive industries to U.S. and European economies, while MNC's FDI of labour intensive industries is transferring from Asian NIEs to ASEAN and in near

future, to China

- ③ rapidly increasing FDI by the MNCs grown in Asian Dynamic Economies (ADEs), as shown in Table 3
- ④ after about 1980, more and more positive participation of Japanese small & medium scale of companies in FDI to Asian developing countries.

III . Theory and Policy for Establishing the Asian Development Corridor

3-1 Theoretical Model of Development Corridor

The development corridor is quite a new concept. At first, I give a definition that the development corridor is a interflow system or a social communication capital of development among growth-leading regions.² It is composed of following systems, (Table 4)

- (1) transportation systems, including roads, rail, marine, air transportation
- (2) communication systems, including telecommunications, postal, transborder data flow services
- (3) interchange systems, including economy, politics, culture, education and science & technology, etc..

We can expect following effects by establishing a new development corridor. First is the diffusion effect of development through the development corridor. The development of a country diffuses to another countries by trade, foreign investment, technology transfer, information flow through the development corridor.

Table 4 Main Development Factors getting through The Development Corridor

development factor development corridor	Main Development Factors		
	Movement of Factor of Production (FDI)	Trade (Commodity Market)	Information (Communication, Knowledge)
Interchange System	Liberalization of FDI	Free Trade systems	International
	Development of FDI, TT and financial markets	Modernization of international transaction	information order Intellectual property
Transports System	Investment security	Modernization of international distribution	Information exchange
	Transport of factor of production	Development of distribution areas	system Direct contact among people
Telecommunication System	Optimum location and allocation	Development of trading areas	International cultural exchange
	Economies of logistics	Development of trade and division of labor	Development of high-tech trade
Development Corridor	Business services	Trade business services	Development toward
	Promotion & support services	Development of services in trade	Information Society
	Chance development	Development of trade chance	Transnational data flow
			International communication

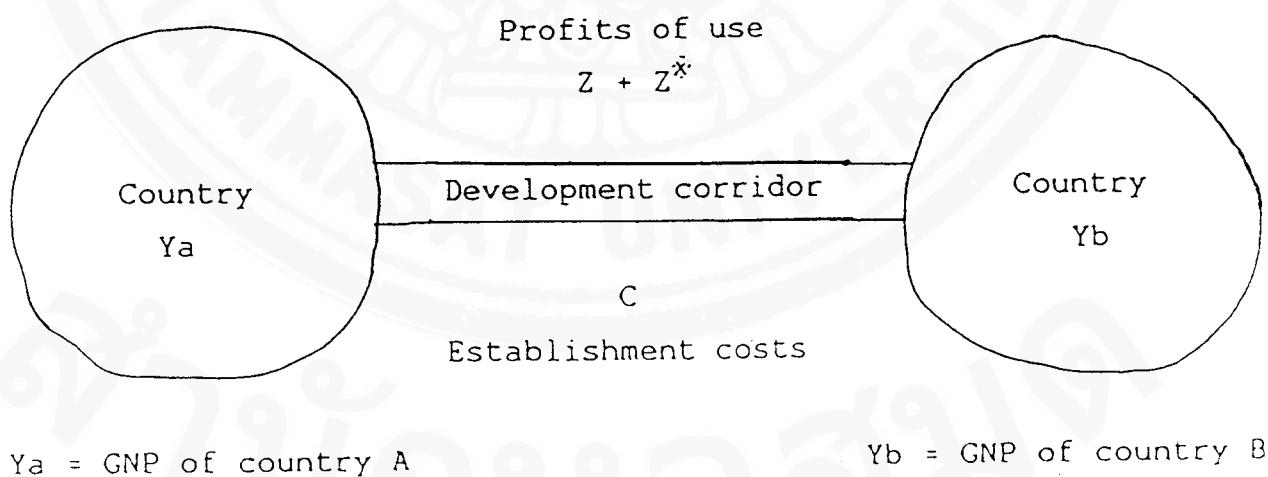
FDI: Foreign Direct Investment, TT: Transfer of Technology

Second is the interaction effect in which related countries are mutually accelerated by their communication and competition through the development corridor. Specially, the synergy effects for development are remarkably greater among growth poles.

Third is the mutual adjustment and cooperation effect. The development corridor is able to use it as mutual adjustment and cooperation measures in the international division of labour, industrial structures and international politics.

We try the model analysis of the development corridor. We consider ① two countries or areas model, Country A and Country B, ② its change and effect set limits to their economy, ③ profit maximization behaviour, ④ establishing a new development corridor. The channels of development corridor are trade, productive factor movement and information flow. This is a comparative static analysis by the comparison before and after the establishment of development corridor.

Figure 2. Effects of establishing the development corridor



We can divide the profits of using the development corridor into the primary profit (Z) which is able to gain from the direct use of development corridor, and the secondary profit (Z^*) which is derived from the primary effect (Z) or indirect use of the development corridor. So, the total profit from the use of it is,

$$\text{Total profit} = Z + Z^* = Z(1+g) \quad (1)$$

here, $dZ^* / dZ = g$.

Generally speaking, it used to take the construction period of about 2 ~ 5 years, and its' service life is about 20 ~ 30 years. We compute the present value of profits (X) with due regard to above factors and the time discount.

The present value of total profit (X) is

$$X = \sum_{t=u}^{u+n} \frac{dZ_t}{(1+p)^t} (1 + g) \quad (2)$$

(u) is the construction period, (n) is service life, and (p) is the discount rate of time. The net profit ($X - C$) is

$$X - C = \sum_{t=u}^{u+n} \frac{dZ_t}{(1+p)^t} (1 + g) - C > 0 \quad (3)$$

C is the present value of total cost.

$$Z = aE + bR + \pi K \quad (4)$$

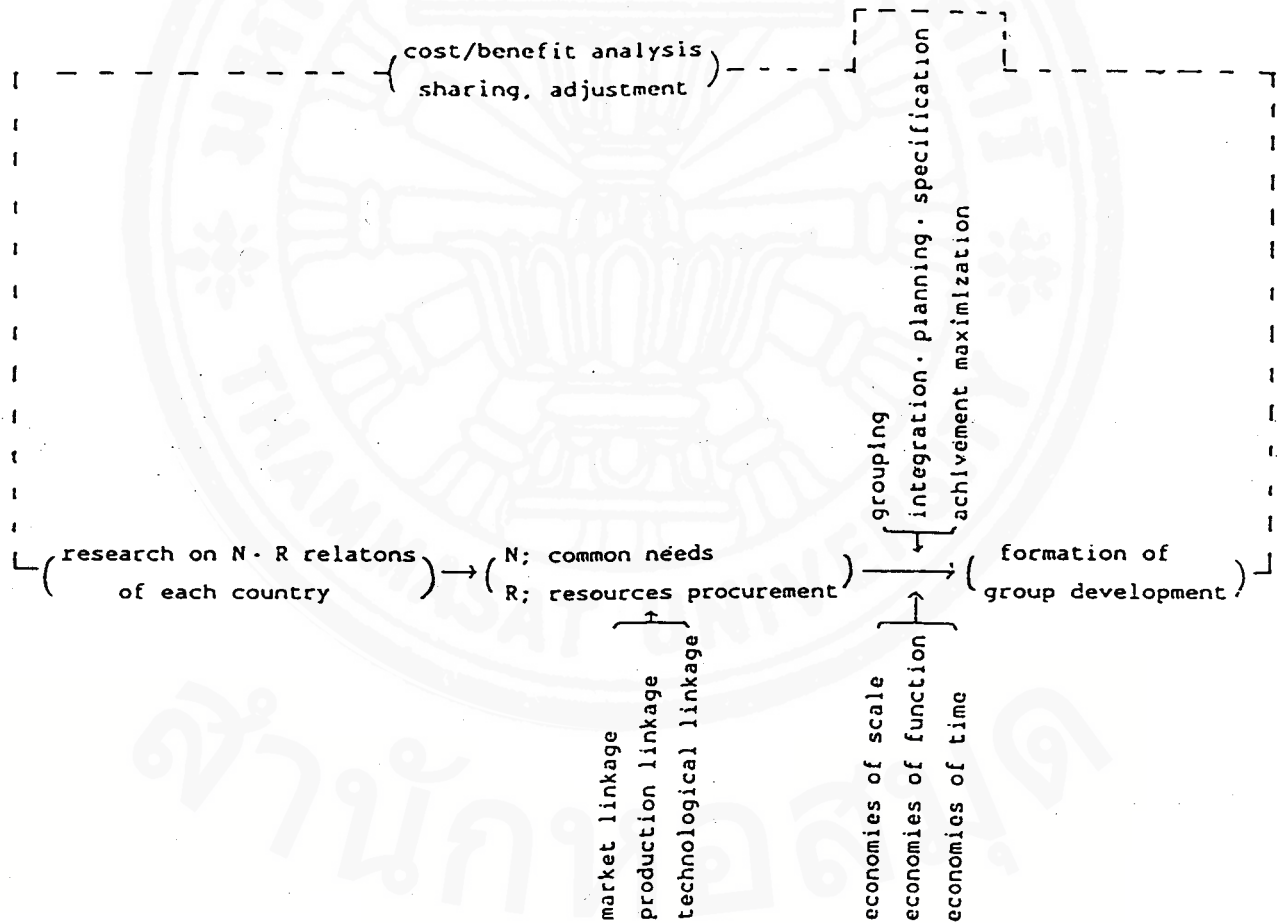
E is the amount of trade (export + import), R is the transferred amount of productive factors, K is information, and a, b, π are profit coefficients.

3-2. Group development method

Group development method is a method for making the development project by group cooperation.³ This method is useful

for realizing a common purpose of group. Their development project is formed as follows, at first, a development group is made by some countries with common needs (N) but lacked in requested resources (R) in only one country, then the group makes a group development project by planning, linking and adjusting their N - R

Figure 3 Formation of Group Development Project



category	common needs	policy
communication	telecommunications information network transportation network road, rail, sea, aviation	international cooperation, transfer of technology joint R & D
science & technology	R & D of biotechnology ocean development space development meteorology, etc.,	international R & D cooperation, transfer of technology, Joint R & D project
economy	trade creation foreign investment technology transfer remove economic conflict	development of international division of labor, liberalization, coordination
politics	peace and democracy	dialogue, mutual trust

relations in the group from viewpoints of technology-, production-market-linkages, in consideration of economies of scale, economies of function, economies of time (as showed in Figure 3).

We can think of several kinds of such common needs as the resolution of communication development problem, ocean development problem, problems of food and energy, development problem of international division of labour, etc.. We can make many requested development projects by applying the group development method to this region after the establishment of Asian development corridor.

3-3. Purposes and principles for establishing the Asian development corridor

The incessant national growth is necessary to keep the peace to be a base for economic development. In Asia, there are all

sorts and conditions of such countries as the free market economies, socialist countries, developed countries, NIEs, LDCs, and LLDCs. Asia has been suffered from many international conflicts and even now might have some kindling factors to start a fire with. We are necessary to select coexistence and coprosperity among national systems and make such international cooperation as to be able to have the synergy effect between economic development and peace.

The purposes for establishing the Asian development corridor are as follows,

- (1) expansion of development capacity and revitalization of the world economy
- (2) building up of more independent development mechanism in Asia
- (3) making of the synergy effect between development and peace.

The establishment of Asian development corridor means that it is to make up a system for using the linkage effect of economic development and the synergy effect between development and peace, by bridging among leading development regions in Asia.

It is true that we are necessary to have the principles recognised by all related countries for making the development corridor.

First is the principle for establishing the sound interdependent relationship securing sovereignty, equity, justice, mutual respect. This is not only the principle for development cooperation but also the principle for peace.

Second is the principle for mutual profit among related countries. I will especially attach importance to develop a new international division of labour.

Third is the principle of sustainability. In establishing the development corridor, if an assistance from developed countries is requested, it is necessary to transfer technologies from them for

the sustainability of the development corridor.

3-4. Selection of areas for establishing the development corridor

Which country or area we select is very important in building of the Asian development corridor. We are necessary to strategically select such countries or regions as to create a development locomotive in Asia, which are able to answer the described purposes and principles for establishing it. The selection criteria of such countries or regions are as follows,

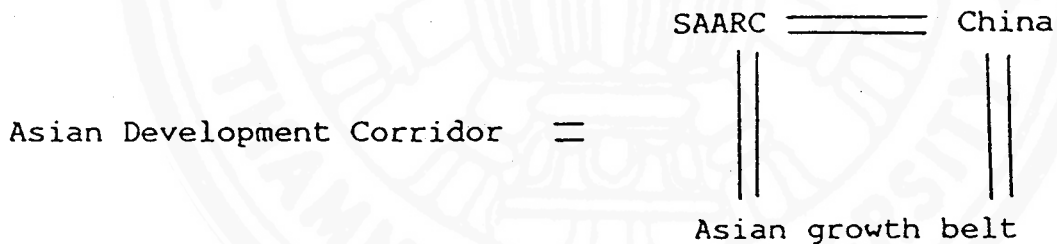
- (a) leading rapidly growing country or region that has a favorable and big influence on the other related countries and an expectation of large gains from building it
- (b) such country or region as to play important parts not only in development but peace of the related area
- (c) such area that will be in fear of serious international conflicts in future, unless related countries provide for a new effective adjustment mechanism.

Let us select country or region concretely by applying the above criteria to establish the Asian development corridor.

First of all, it is the Asian growth belt that is playing an important part as a locomotive of economic development not only in Asia but also the world. The Asian growth belt is composed of ASEAN, Asian NIEs and Japan.

Secndarily, we should select SAARC (South Asian Association for Regional Cooperation), that has her possibility of growing up as a center of development and peace in South Asia, though she is now a very poor and frequently disputing region including 4 LLDCs. If other related countries can support her growth by building the development corridor, SAARC would be able to play an important role in Asian develoment and peace.⁴

Thirdly, we should select China that is a socialist country. China has continued her rapid economic growth by introducing the free market economy and accessing to the West since her open policy in 1979. China will have a big export drive to Asian and world markets after the completion of the 7th five years plan in 1990, because she can enter into the international division of labour by the consolidation of industrial infrastructures. China's big export drive would give rise to some severe trade conflicts with another Asian countries without an effective adjustment mechanism. However, it is true that China's entrance to the international division of labour of Asia through the Asian development corridor can greatly contribute to Asian development and peace.



The distinctive features of Asian development corridor are as follows,

- ① Asian development corridor has half of the world population, about 2.6 billion people in 1987
- ② it interlinks together free market economies (Asian growth belt), a socialist country (China) and mixed economies of both systems (SAARC)
- ③ it is a linking among regions with different stages of development each other from a point of view of the development stage (Japan > Asian NIEs > ASEAN > SAARC and China, in terms

of GNP per capita)

- ④ we select very noticeable and influential regions and country from viewpoints of development and peace in Asia.

Under the existing circumstances, these three parties have not so intimate communications each other and the region qualified for growth pole is only the Asian growth belt. Therefore, we can expect so great effects if they will be linked each other by new development corridors and all of them will have the functions of growth pole. I think that building up of a new development corridor to China would be not so difficult as far as China continue to take open policies. But SAARC would be not so easy to establish it, because she herself is requested to be much pains to keep up the association. The sustenance of SAARC means to keep the peace in South Asia. I think that we can support SAARC's development by building up of the development corridor to her (Table 5).

I would like to make reference to the differences of the development corridor from the economic integration, as follows,

① we can have the trade creation effect, but there is no the trade diversion effect changing imports from the low-cost country to the high-cost country, because the development corridor does not make the customs union.

② when the establishment of a development corridor brings with the construction of some physical facilities besides the creation of systems, it has to pay the construction costs.

③ a stand-point of international public goods is requested for the establishment of a development corridor, because it plays an important part as a infrastructure or social capital of international relations which everybody can use.

In addition to these regions and nation, Siberia might be not unthinkable to join in future. Of course, it has not such

possibility in the present conditions. We can recently hear the proposal of establishing the Japan sea economic area including the Soviet Union, Korea (North and South), and Japan.

Table 5 Selected Areas Connecting with the Development Corridor

areas system		Asian Growth Belt↔China	Asian Growth Belt↔SAARC	SAARC↔China
Development Corridor	Interchange System	Development cooperation from Asian Growth Belt Development of interchange between both Use of overseas Chinese economies Promotion of open door policy, reform in China Strengthening of Free Trade System, Intellectual property system, Modernization of international T T system, Liberalization of FDI	Development cooperation from Asian Growth Belt Development of international division of labor Promotion of investment from Asian NIEs Modernization of T T mechanism	Peace cooperation Development of free trade infra Trade development Joint development of the tourisms Cultural exchange
	Transports System	Formation, development of International JIT International connection among FPTZs Constraction of infra Chinese coastal areas Asian highway, Asian seaway, Asian airway, Trans-Asia railway, etc..	Trans-Asian railway Development of infra of international tourism Modernization of ports system	Extention of Mountains transpot system Development of mountain tourism
	Telecommuni- cation System	Modernization and Inter-nationalization of China communication system Constraction of new communication infra Asian Sat, Automation system of languages translation, High-speed postal services, TV meeting system, Intelligent buildings	Communication develop-ment Modernization of communication infra T T of telecommunication	Communication development Constraction of new communication infra

infra:infrastructure, JIT:just in time system, TT:transfer of technology
FPTZ:free processing & trade zone

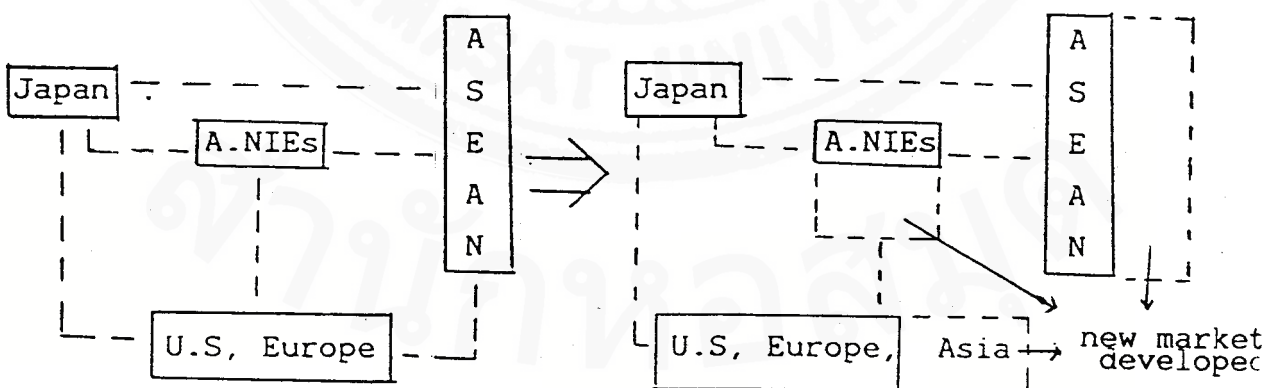
3-5. Triangle Relationships and Strategies of Each Partner

We select three partners for establishing the Asian development corridor. However, they have several differences in terms of the development stage, socio-economic structure, social system and etc.. So, we consider their development trends and the relationships among three partners to look for the possibility for establishing it. In establishing the Asian development corridor, the Asian growth belt has the biggest influence on it under existing circumstances.

1. The Asian growth belt

The Asian growth belt is now restructuring in response to stepping up to the higher development stage by greater efforts of related countries. She has been requested to develop the international division of labour within Asia because of low growth rates and their protectionisms of American and European economies.

Figure 4 Development Strategy of Asian Growth Belt



Japan has played an important role as a center for supplying capital and technology in this belt, and would be requested to continue it for the time being, and to cultivate domestic market

for another Asian countries. It is true that Japanese imports from another Asian countries have been rapidly increasing by the Japanese trade cooperation in which fairs organized by Japanese government for the developing country's exports have been frequently opened in Tokyo besides the preferential tariff system and another cooperation policies.

Asian NIEs are now at an entrance of the developed economy. They have played an important part as the assembling base of manufactured products for the world market, and from now on they will advance to the processing base and will also be expected to work on ASEAN member countries as a transfer agent of economic development by using their foreign direct investments and transfer of intermediate technologies. Recently, many new MNCs (multinational companies) have been brought up by their own efforts in Asian NIEs, and they are increasing their foreign direct investments into ASEAN.

Particularly, Asian NIEs have a intimate relation with China who wants to introduce foreign direct investments and foreign advanced technologies, in terms of race, aproximity, culture, etc.. The vast majority of people is people of Chinese origin in all economies other than Korea. Foreign enterprisers of Chinese origin or Chinese overseas are able to invest into China in more favorable conditions than others. Their foreign direct investments can transfer intermediate technologies into another developining countries, and can create a linked specialization among developed, NIEs and another developing countries, unless they make a monopolistic or dependent relation.

ASEAN has become a well-established association having some influence on the Asian political economy, and a supplying base of parts for big manufacturing industries or MNCs of developed

countries. However, it is true that ASEAN is now requested ^{to make} some new strategies for stepping up to the higher stage of development or to catching up with NIEs, of which make efficient use of the advantage of association. We can propose some joint development projects for ASEAN by making a practical application of the groupe development method in fields of energy, communications, industrialization, creation of a new international division of labour, etc., as showned in Table 5. ASEAN has to direct their more and more efforts to develop the inner-regional division of labour so as to reach about 30 % of total trade from 22 % at present.

2. China

China has taken the open-door policy for the modernization of 4 main national items (agriculture, industry, armament, science & technology) since 1979. The number of her open-areas for foreign enterprises became 288 including cities and districts in 1987. China's open-door policy is never for the sake of introducing the capitalism, but to advance her socialism by the four modernizations. What China does want is not the foreign controle by MNCs, but more capitals, higher level of technologies, and foreign markets for her exports. Though Chinese government has been taking positive policies for introducing foreign investments and technologies, especially from Japan, their increase is slow-moving. One of it's reasons is that foreign investors feel uneasy about their freedom of management and Chinese government's policies in future. It is true that the success stories of foreign direct investments are very few in China.

Chinese export drive will be rapidly strengthening after 1990 that her 7th development plan will be completed. Because, the 7th development plan will make it possible to enter into the

international division of labour by building the infrastructures for exports, which will largely increase her entering capacity. If Asia should not be able to prepare for some new markets accomodating to Chinese export drive, she will have severe conflicts among related nations. China is requested to promote the internationalization and the liberalization of national economy in the same time.

We leave several kinds of problems to be solved in linking the socialist economy with the free market economy, such as the differences of price systems, foreign exchange systems, the commercial laws, and so on. Now, China is exerting her possible efforts to establish several required systems in reference to the system of developed countries.

3. SAARC

SAARC is the biggest regional association with the population of about one billion in the world, which is in very low income level and has sevrsal kinds of kindling coals to make a trouble. It is , however, quite true that the sound growth of SAARC is very important for the development and peace of Asia. For the sake of it, member countries are requested to take a close cooperation each other in line of the corective self-reliance.

The economy of this region has largely been depended upon the agriculture and promoting the industrialization on the other hand. In their economic development plans, the increase of agricultural productivity and the industrialization have been emphasized. In the industrial development strategies, there is a common understanding that one of main points should be to provide greater emphasis on the development of agro-based industries producing mass consumption goods such as textiles, food-processing, sugar and edible oils. It has been observed in recent years that the growth

of such industries as consumer durables has been quite rapid in India, Pakistan, Sri Lanka. The growth of SAARC depends largely on the leading role of India that is the core of regional development and regional division of labour, and on her absorption capacity of development factors overseas also.

After the resolution of Afghanistan problem, it is supposed that the strategic tide of SAARC would be moving toward more economic cooperation from the political cooperation. All countries are requested to modernize various infrastructures for development and to promote national land development, so SAARC will plan some joint development projects such as international transportations, telecommunications, the multilateral - multifunctional development of the Himalayan river system, and so on.

SAARC has been tightening the intraregional solidarity among member countries for peace and development in accordance with the self-reliance. SAARC will call her larger attention to the outward-looking policy than the inward-looking policy after being well experienced in the cooperation, as well as ASEAN.

IV. Spiral Transfer of Development and Japan

The Growth Belt in East Asia plays vital roles of an economic growth center not only in East Asia but also in the international economic sphere. Geographically, the Asia Growth Belt and its trade route of processed goods extends to American and European markets, starting from the West-Pacific area. Poverty-stricken socialist countries are located in its adjacent areas. Put another way, in East Asia, there are sunny countries (those included in the Asian Growth Belt) and countries in the shade without sun (poverty-stricken socialist countries).

Development analytical study on East Asian economic growth tells us that a

freer and more liberalized economy grows faster in proportion to its degree of openness. Although the general public's view is just the opposite, I think it more proper to say that a freer and more opened economy is a prerequisite and not a product of economic growth. This has been proved by the development of the Asian Growth Belt. It is true that there are some countries that developed successfully by effectively utilizing foreign aid, but it is also true that no countries are successful if they are fully dependent on foreign aid.

East Asia has to seek structural transformation to allow every country to follow a high growth route toward the 21st century. To do this, three important things must be done. First, cooperation among countries under different political systems is vital to help poor countries shift their direction from poverty-stricken course to a development course. This means it is necessary to develop freer economic exchanges by establishing cooperation ties and linkages between socialist economies and free market economies. Second, it is necessary to integrate countries taking a high growth course to be mutually benefited by means of trade, international investment, and communication. This integration among countries will allow particularly those countries that are new in taking a growth course to make swifter economic development. Third, it is necessary to strengthen the motive force to upgrade the integration. The "Development Corridor" and international development cooperation to be mentioned below help achieve these three goals strategically.

The Asia Growth Belt plays the role of a locomotive in the promotion of economic growth in East Asia. In 1979 China changed its development course, from a poverty-stricken to a growth-oriented one. Three Indochinese countries and Myanmar are seeking to take the same step.

The Asia Growth Belt covers East Asia, from north to south. Many countries

concerned are making efforts to extend the Asia Growth Belt to build a Pan-Japan-Sea Economic Zone and a Yellow Sea Economic Zone. Within the Asia Growth Belt there are several programs being promoted, such as "Growth Triangle Concept" sought by Johore Bahru (Malaysia), Singapore, and Sumatra (Indonesia), and the International Tourism Development Cooperation Project (New Economic Cooperation Zone) is promoted by Phuket (Thailand), Penang (Malaysia), and Medan (Indonesia).

Major functions of the "Development Corridor" are a transportation system, a communication system, as well as an exchange system. This is very useful when forming Triangle Growth, the New Economic Cooperation Zone, the Pan-Japan-Sea Economic zone, and the Yellow Sea Economic zone, in addition to the Asia Growth Belt. Moreover, this corridor will bring mutual benefits, allowing us to maximize multiplier effects when developing ties with three Indochinese countries and China. Thus, the "Development Corridor" will create diversified business opportunities.

In the new world order which will form in the future, what kind of role should East Asia take? They will never take the road of subordinate development which depends on the umbrella and economic aid from advanced countries any more. As for the issues which Asian economies should solve, these exist at the governmental level and the company level, and have not only positive points but also maybe negative ones.

One positive aspect of the future issues for the East Asian economies^{is} in contributing to the development of the world economy as a growth-leading center toward other countries outside of the area. Another is to further increase the capacity of development of the East Asian economies in the process of structural reform to the independent and autonomous development system of its own economy.

The negative issues are; 1. the possibility of stalling the high growth in the Asian belt and measures to avoid it, 2. the possibility of growth rate differences between the high growth area and the stagnated area, and the various issues occurring out of this and 3. the issues of trade-offs between development and environment and countermeasures for pollution issues.

As for the positive countermeasures to the issues at the company levels, it is necessary that there be expansion of a free market economy in the future, creation of company opportunity, development of innovative opportunities, development of an effective communication network among companies for reforming the environment and a system for economic activities. Especially in the "era of functionalism" it is important to form an international network among innovative medium-sized companies. Here I would like to suggest the establishment of an "East Asian Company Network" with innovative companies as the center. I think the activities of the "East Asian Economy International Symposium" are very beneficial for the establishment of an international network of companies. If these activities are continued every year, an industrial fair by the country which is the leader for the year or some other big events held together, it might be more effective.

As for the negative measures toward issues which the company will face, the first is economic friction. Economic friction has occurred for various reasons including a perception gap, inconsistency of social order, friction of corporate cultures, over presence and a clash of company activities. I do not think the economic friction with socialistic countries will disappear for a while. It is necessary for both sides to make some effort to avoid the friction through accumulating the effect of the studies.

East Asia economies have to solve those above mentioned questions.

Specifically, to cooperate for making the GATT/Uruguay Round successful for the further improvement of the free market economic order, to cooperate in making harmony and in building together the Asian Growth Belt area for economic development the three Indochinese countries and Myanmar in South East Asia. In North East Asia mutual cooperation is required to achieve the Pan-Japan-Sea Economic zone and the Yellow Sea Economic zone. This means all of the East Asian economies effectively cooperate autonomously to co-existing and co-prosperity in the area as one economic area. It makes easier to transfer the development resources such as capital, technology and information which are necessary among each country, and to form a system which develops high growth countries which are beneficial toward other countries.

As for the strategy and activities for companies, first it is important to establish an international communication network of companies. Second is to have exchanges to exploit new business opportunities. Exploit of business opportunities means, in terms of the industry, the introduction and development of a new business, in terms of the area, expanding overseas. Especially for the future the business development toward the area of Asian socialistic countries is important. This is also possible by the innovative activities using an international communication network. Of course careful risk management is also necessary.

It is sure that this new concept of development corridor is effective to establish an international development center mechanism by connecting among rapidly growing countries or regions. I think that Asian development corridor would be very useful not only for development but also peace in Asia and the world. Theoretically, I applied a two countries model to the development corridor, however it is true of a multi-countries model more than two.

The establishment of Asian development corridor would be able to have a spiral transfer effect of development and peace from the inner-area toward the outside of it. All related countries are requested to cooperate to build hardwares and softwares of Asian development corridor such as communication systems, interchange systems and another international orders. The development assistance of developed countries besides their regional cooperation would be necessary to establish big hardwares and sophisticated softwares of Asian development corridor in terms of financing, information and technologies. In old time, the corridor was narrow and used mainly as a trade route of products, subsequently, expanding as an international capital route. Recently, it has been given prominence to the transfer route of technology and information. Now, developed countries are going forward into the information society, while many developing countries get under or no further than the industrial society. If they keep on these, the development gap will be expanded between developed and developing countries. The expansion of development gap produces several kinds of conflicts.

Therefore, the development corridor between developed and developing countries can reduce the gap by the transfer of development from the developed to the developing country. It is also able to have a development synergy effect by connecting among rapidly growing centers. Asian development corridor is requested to be composed of regions or countries with a role of growth pole towards neighboring countries, a great absorbing capacity of development from overseas, and with a large agglomeration effect of development factors, which is able to produce a synergy effect each other.

In application of the development corridor to technology transfer in Asia, it can be thought of such system as an Asian

cooperation system for the promotion of technology transfer, composing of ① cooperation system for technology transfer (exchange of technical information, international linking of "center of excellence" in science & technology, industrial fair, bringing up and organization of transfer agents of technology, and so on), ② cooperation system for the interchange of science & technology resources (information, use of research facilities, R & D financing, human resources for R & D), ③ joint R & D projects for common needs, ④ cooperation for establishing more effective science & technology order (intellectual property system, industrial standard system, TQC movement, etc..)

1. Masaru Saito, "A Scenario of Asian Economic Development". (in Japanese), SEKAI KEIZAI HYORON, Jan. 1987.
2. -----, "The Theory of Development Corridor: Application to Asia". (in Japanese) KEIZAIGAKU RONSAN, Mar, 1988.
3. -----, International Political Economy of Technology Transfer. (in Japanese) TOYO KEIZAI SHINPOSHA, 1986.
4. -----, "SAARC". (in Japanese) SEKAI KEIZAI HYORON, Apr. 1988
5. -----, " The Asian Era and the Strategy of Japanese MNCs". KEIZAIGAKU RONSAN, Sep. 1987.
6. -----, "The Informatics Revolution and the Developing Countries". Haq, K (ed.) Informatics for Development: The New Challenge. Society for International Development, Islamabad, 1988.