

The Rise of Global Logistics in East Asia

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Abstract

During the last decade the vigorous expansion of international trade in East Asia region has generated a remarkable record of high and sustained economic growth which is unmatched by any other region in the world. In line with this, container tonnage in the East Asia region has been on the rise dramatically, expediting the shift of the center of global container traffic from Europe and the U. S. to East Asia region. The port of Hong Kong, Singapore, Shanghai, Shenzhen, Busan, and Kaohsiung in East Asia region which have accounted for third fifths and been the leading top six out of world top 10 container throughput ports since 2002, the potential of the container tonnages in East Asia region can not be ignored.

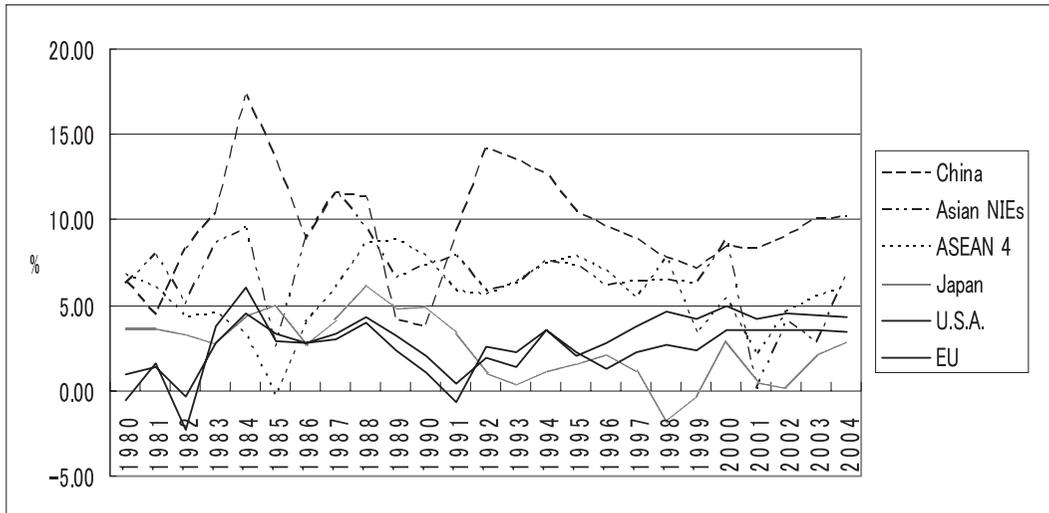
The surge of the container tonnage in East Asia region also can be perceived from the weight of said region out of world total container tonnage. In 1985 the share of container tonnages in East Asia region was 28.5 percent (15,928,000 TEUS) out of world total, however, in 2003, the share became 48 percent (143,620,000 TEUS), an nine times increase over 1985. The share of East Asia region in the world container market is predicted to rise to 52.4 percent in 2010, making it the world center of liner shipping operations.

1. Introduction

Over the decades, East Asia has enjoyed a remarkable record of high and sustained economic growth which grew faster than all other regions of the world¹. East Asia's economic prosperity can be proven by its real GDP growth rate. For years, the newly industrializing Economies or Asian NIEs (Hong Kong, Singapore, Taiwan, Korea), ASEAN 4 (Philippines, Malaysia, Thailand, Indonesia) and China have experienced high real GDP growth compared to developed countries such as Japan, the U. S. A. and EU (see Figure 1).

The contrast is even more pronounced when the growth of per capita income across developing regions is compared. The high economic growth in East Asia, particularly the Asian NIEs, which has been showing a high real GDP growth rate in comparison with other regions or countries is, de facto, closely related to the booming international trade being conducted regionally and globally, imparting to East Asia region an extraordinary dynamism which greatly changed the shipping environment in the East Asia region. In year 2004, the mains ports of Hong Kong, Singapore, Shanghai, Shenzhen, Pusan

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Figure 1. Real GDP Growth Rate of Asia in Comparison to Other Countries/Regions in the World

Note: Real GDP growth rates are calculated by simple average.

Source: *International Financial Statistics Yearbook*, 1998, 2005, IMF

and Kaohsiung in the same region have accounted for three fifths of the world top 10 container ports in terms of container throughput.

This report falls into three main sections. The first introduce the surge of container shipping in East Asia. The second analyzes the weight of East Asia in global container tonnage, while the final section explicates possible sustainability of container tonnage in East Asia toward the 21st century.

2. The Surge of Container Transportation in East Asia

East Asia's economic prosperity can be dated back to the September 1985 "Plaza Accord" held in New York, U. S. by the Group of 5 (the U. S., Germany, Britain, France, and Japan) intervening in the currency markets to drive the dollar drastically low against the Japanese yen, expediting the second wave of Japanese enterprises' overseas forays in Asia region. Other factors include the substantial appreciation of the Korean and Taiwan currencies, labor shortages which induced soaring wages since 1988, as well as the drastic appreciation of the yen during 1991–1995 which also helped the Taiwanese and Korean enterprises to survive in international competition. In response to the impending difficulties, Japanese, Taiwanese, and Korean enterprises were forced to shift their production from the Asian NIES to ASEAN countries and China. As a consequence, the value of international trade and the ratio of trade reliance in East Asia have grown enormously, thereby generating a remarkable record of high and sustained economic growth unmatched by any other region in the world.

Triggered by this force, the volumes of shipping have risen steeply, generating a large

concentration of container tonnage in East Asia. For years, ports in East Asia have been accounting for half of the world top 10 container ports. Of particular note, taking year 1997 for instance, the container throughput of four hub ports (Korea, Taiwan, Hong Kong, Singapore) in the Asian NIEs accounted for almost one fourth of the global total. What's more, in year 2001, the eastern coast central main port—Shanghai and in year 2003 the southern main port — Shenzhen (Yantian, Chiwan, Sekou) of China surpassed port of Rotterdam joining port of Hong Kong, Singapore, Kaohsiung, and Pusan as the top five out of the world top 10 container ports (see Figure 2). Under the momentum of this unstopping force of ever increasing container cargoes handling in the East Asian region, in year 2005, the East Asian main ports have accounted for three fifths, namely 60 percent out of world top 10 container ports.

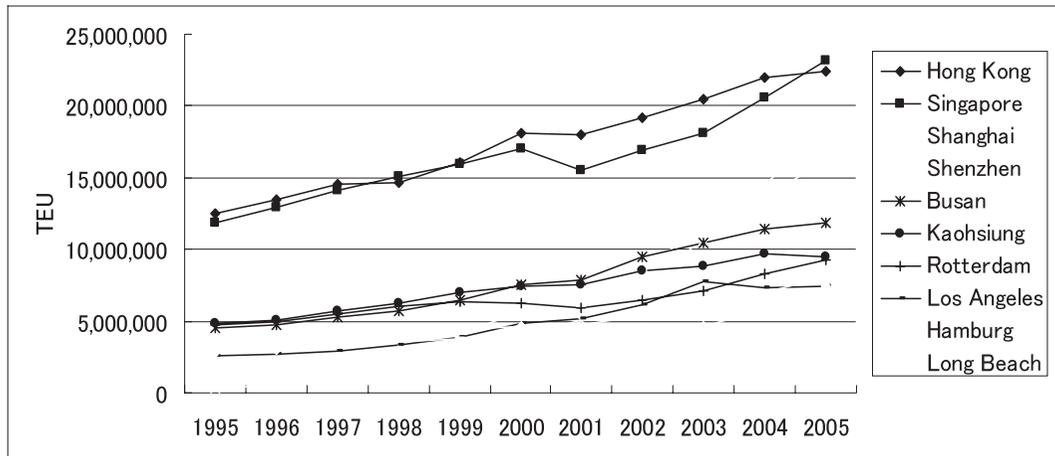
The drastic economic growth of East Asia was certainly not accomplished overnight. In the 1960's Japan became the focus of global attention as an emerging economic power catching up with the U. S. and Europe. The economic growth in Japan was soon followed by the Asian NIEs (particularly, Taiwan and Korea), then ASEAN countries came to realize their vast potential for dynamic progress. Next, China started a giant stride. In other words, in East Asia, one country after another has played the role of a forerunner, pulling the rapid economic growth of the entire region. This is the single most important factor behind the rapid upswing of East Asia on the global scene.

Figure 3 illustrates the world's container traffic flow in 1990 and 2003. In 1990, the world's top trade line—the Trans-Pacific (Asia/North America) service handled 5.34 million TEUs, however, in 2003, the traffic volume reached to 14.08 million TEUs, a 2.6 times increase over that in 1990. On the other hand, during the same period the container volume handled in the Asia/Europe service, which is second to the trans-Pacific service in terms of container tonnage, was 2.89 million TEUs, however, in 2003 the traffic volumes reached to 10.70 million TEUs, a quadrupled increase over 1990.

On the other hand, in 1990, the container traffic volume handled in the intra-Asian (Japan, China, the Asian NIEs, ASEAN 4) service was 3.5 million TEUs, in 2003, the container throughput in the same region reached to 11.05 million TEUs, a tripled increase over that of 1990.

It is understandable that the scale of 1990's container traffic handled in the intra-Asian service could hardly compare with that in the trans-Pacific and the intra-European (EU) service; however, it surpassed the traffic volume in the Asia/Europe service's 2.89 million TEUs and the trans-Atlantic service's 3.05 million TEUs which accounted for 12.3 percent and 13 percent of the world's container traffic. However, in 2003, the container traffic volumes in the intra-Asian service reached to 11.05 million TEUs. The figure, nevertheless, could hardly rival the scale of the trans-Pacific service's 14.08 million TEUs, however, it largely outpaced that of Asia/Europe service's 10.70 million TEUs as well as the trans-Atlantic service's 5.27 million TEUs. Clearly enough, the intra-Asian service, with its buoyant economic growth, has become the newly emerging force of the world container traffic services.

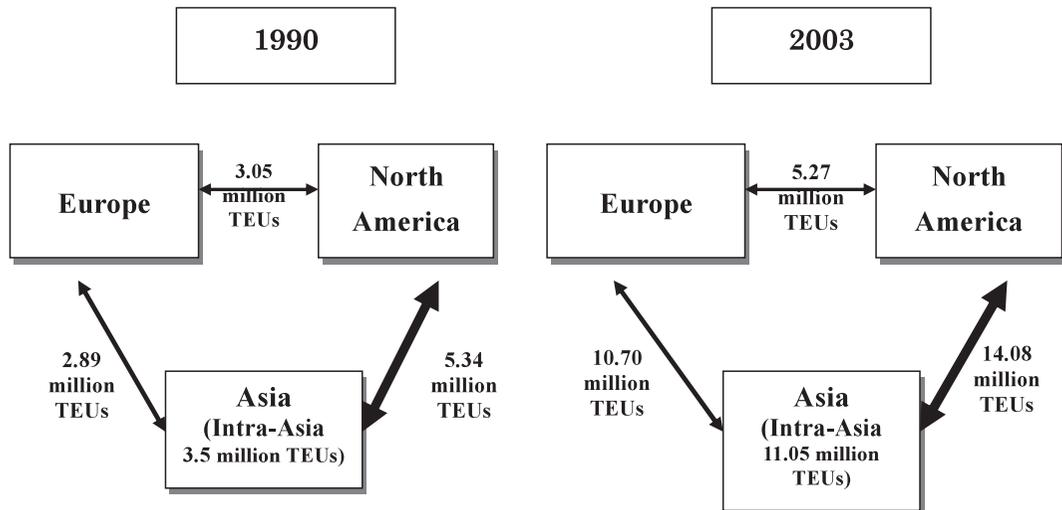
Figure 2. Annual Throughput of World Top 10 Container Ports (1995–2005)



Note : The drop in 2001 of Singapore's throughput was due to the Maersk Sealand's terminal shift to Port of Tanjung Pelepas (PTP), Malaysia in December 2000.

Source: 1. *Containerisation International Yearbooks*, 1992–2004.
 2. *Containerisation International*, March 2006.

Figure 3. The Weight of Intra-Asian Service in the World Container Traffic



Source : Nippon Yusen Kaisha Research Division.

3. The Weight of East Asia in Global Container Tonnage

As has been already mentioned, the container traffic tonnage in intra-Asian service, particularly in the Asian NIEs has been increasing substantially during the last decade. In this section, we would like to look into the position of East Asia as well as the Asian NIEs in the world in terms of container tonnage.

Table 1 demonstrates the container throughput by port, region and country basis as well as their weight in comparison to the world's total container traffic from 1985 to 2003. As is evident from the table, during the period of 18 years the container throughput in East Asia rose from 15.9 million TEUs to 143.6 million TEUs accounting for 28.5 percent and 48.0 percent out of the world's total container tonnages respectively.

If looking more minutely into the hub ports of the Asian NIEs, it can be found that during the same period the weight of ports in the Asian NIEs out of the world's container throughput rose from 14.9 percent to 21.4 percent. It is also surprising to find that during the same period the percentage of total container throughput at the Asian NIEs' main port Hong Kong, Singapore, Kaohsiung and Pusan rose from 12.6 percent to an astounding 19.3 percent, accounting almost for one fourth of the world's container tonnages. In comparison, ports in the ASEAN 4 rose from 3.0 percent to 7.7 percent; ports in China rose from 0.8 percent to 13.8 percent; while the U. S. declined from 20.6 percent to 10.9 percent; the EU 10 declining from 26.4 percent to 17.9 percent. It is apparent that those hub ports in the Asian NIEs have contributed largely to the substantial growth of container traffic tonnages in East Asia as a whole.

Figure 4 and figure 5 indicate the volume and percentage of container traffic handled by East Asia, the U. S. and the EU 10, as well as their weight in the world's total container traffic volume during the period of 1980–2003. As can be seen from figure 4, during the period of 18 years the volume of container traffic handled by East Asia, particularly the Asian NIEs, has been demonstrating conspicuous increase annually. In 1980, the EU 10, East Asia, and the U. S. were the top three container traffic regions in the world; however, in 1984 the container traffic volume of East Asia (14.84 million TEUs) began to surpass that of the EU 10 (14.31 million TEUs), and has been increasing drastically ever since to become the hub of the world's container concentration which is unmatched by any country or region in the world.

In contrast, during the same period, the traffic volume in the EU 10 and the U. S. (10.9 million TEUs) has been demonstrating slow growth, ranking 2nd and 3rd in container tonnage respectively. As a consequence, the gap of traffic volumes between East Asia and the EU 10, as well as the U. S. became ever larger since 1984. In 2003, the differences in container traffic volumes between East Asia and the EU 10, as well as East Asia and the U. S. were among the largest becoming 110.4 millions TEUs and 131.4 million TEUs respectively, which was unprecedented in maritime history. As a result,

Table 1. The Position of Ports of East Asia, the U. S. and the EU 10 in the World Total Container Throughput (Unit: 1,000 TEUs)

| Country | 1985 | 1990 | 1995 | 2000 | 2003 | 2003/1985 |
|-----------------------------|---------------|---------------|----------------|----------------|----------------|-----------|
| Japan | 5,517 | 7,956 | 10,604 | 13,621 | 15,937 | 2.9 |
| (%) | 9.9% | 9.3% | 7.7% | 6.0% | 5.3% | |
| Port of Hong Kong | 2,289 | 5,101 | 12,550 | 18,100 | 20,449 | |
| Port of Singapore | 1,699 | 5,224 | 11,846 | 17,040 | 18,100 | |
| Port of Kaohsiung | 1,901 | 3,495 | 5,053 | 7,426 | 8,840 | |
| Port of Pusan | 1,148 | 2,348 | 4,503 | 7,540 | 10,408 | |
| Asian NIEs Hub Ports | 7,037 | 16,167 | 33,952 | 50,106 | 57,797 | 8.2 |
| (%) | 12.6% | 18.9% | 24.7% | 22.2% | 19.3% | |
| Taiwan | 3,075 | 5,451 | 7,849 | 10,511 | 12,087 | |
| South Korea | 1,246 | 2,348 | 4,503 | 8,530 | 13,050 | |
| Asian NIEs | 8,309 | 18,124 | 36,748 | 54,181 | 64,026 | 7.7 |
| (%) | 14.9% | 21.2% | 26.8% | 24.0% | 23.6% | |
| Philippines | 638 | 1,408 | 1,892 | 3,605 | 3,468 | |
| Thailand | 400 | 1,078 | 1,962 | 3,269 | 4,233 | |
| Indonesia | 229 | 924 | 2,048 | 3,864 | 5,177 | |
| Malaysia | 389 | 888 | 2,075 | 4,613 | 1,0210 | |
| ASEAN 4 | 1,656 | 4,298 | 7,977 | 15,351 | 23,088 | 13.9 |
| (%) | 3.0% | 5.0% | 5.8% | 6.8% | 7.7% | |
| China | 446 | 1,204 | 4,682 | 17,383 | 41,449 | 93.0 |
| (%) | 0.8% | 1.4% | 3.4% | 7.7% | 13.8% | |
| East Asia | 15,928 | 31,582 | 60,011 | 100,536 | 143,620 | 9.0 |
| (%) | 28.5% | 36.9% | 43.7% | 44.6% | 48.0% | |
| U. S. A. | 11,533 | 15,245 | 19,104 | 27,301 | 32,689 | 2.8 |
| (%) | 20.6% | 17.8% | 13.9% | 12.1% | 10.9% | |
| EU10 | 14,782 | 19,697 | 26,846 | 43,892 | 53,706 | 3.6 |
| (%) | 26.4% | 23.0% | 19.6% | 19.5% | 17.9% | |
| World | 55,903 | 85,597 | 137,239 | 225,294 | 299,280 | 5.4 |

Note: 1. The EU10 refers to United Kingdom, Germany, France, Holland, Italy, Spain, Belgium, Portugal, Greece, and Denmark.

2. Statistical Abstract of Transportation and Communications, 2000, Republic of China, Department of Statistics, Ministry of Transportation and Communications.

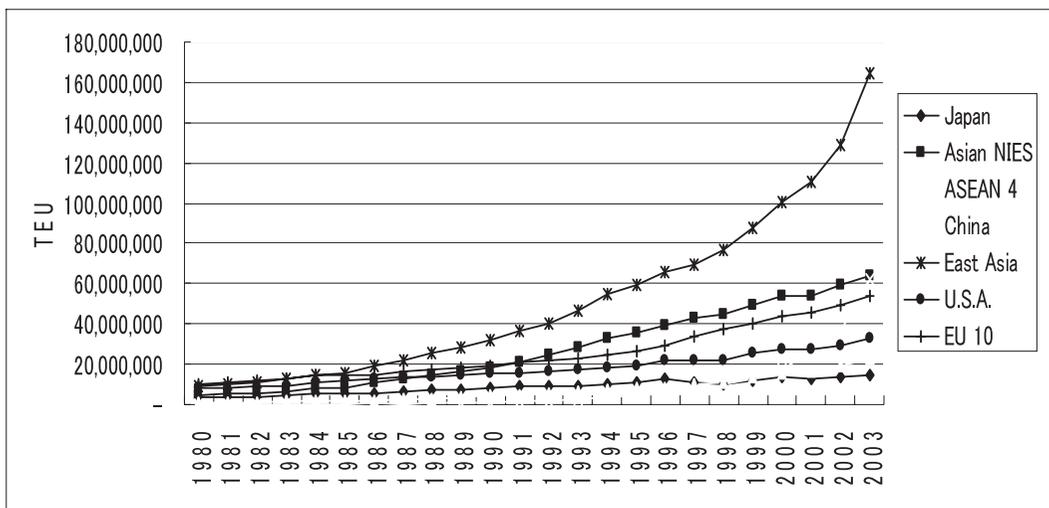
Source: *Containerisation International Yearbook*, 1983–2005.

the percentage of East Asia in the world's total container traffic volume has reached astonishing 54.8 percent in 2003 compared to its 24.4 percent in 1980.

Also, special attention should be paid to the percentage of container traffic of the Asian NIEs out of world's total container traffic volume. In 1986, they demonstrated a drastic increase to 17.4 percent, a 27.7 percent increase over the previous year (1985) in which the G5 agreement expedited Japanese enterprises' foray (labor intensive production) in the Asian NIEs, thus, by exporting the plant equipment, parts and etc., generating a substantial container concentration in this region. The percentage reached to 24.0 percent in year 2000. In comparison, during the period from 1985 to 2000 the percentage of container traffic of the EU 10 out of world's total container traffic volume dropped from 26.4 percent to 19.5 percent and that of U. S. from 20.6 percent to 12.1 percent.

From this phenomenal change, it can be construed that the center of global container traffic has been shifting from Europe and U. S. to East Asia.

Figure 4. Weight of East Asia, the U. S. and the EU 10 in World Container Traffic Volume (1980-2003)



Note: The EU10 refers to United Kingdom, Germany, France, Holland, Italy, Spain, Belgium, Portugal, Greece, and Denmark.

Source: *Containerisation International Yearbook*, 1983-2005.

4. Possible sustainability of container tonnage in East Asia toward the 21st century

The concentration of container tonnage in East Asia and the intensity of operations are significant not only in regional but also in global terms. Nor is it the simple magnitudes involved that make regional concentration significant. It is also the way in which the ports are linked together into global

and regional shipping networks. The mainline of hub/feeder structure focuses on large flows of containers and shipping capacity on to a small number of extremely efficient ports; this, combined with the further distribution capacity of these ports, gives East Asia particular significance at both a global and a regional scale.

1999 saw the economic rebound in Asia long after the financial crisis originating from the Thai Baht devaluation in July 1997. The economic crisis-induced stagnant growth has come to an end. The Asian region has generally turned the corner and is now heading towards economic recovery though the growth is set to slow². World economic growth and world trade are improved further since 2000. Given that a sustained economic cyclical upswing is now underway, the robust performance can be attributed to the acceleration of Asian economic recovery plus an upturn in transpacific shipments.

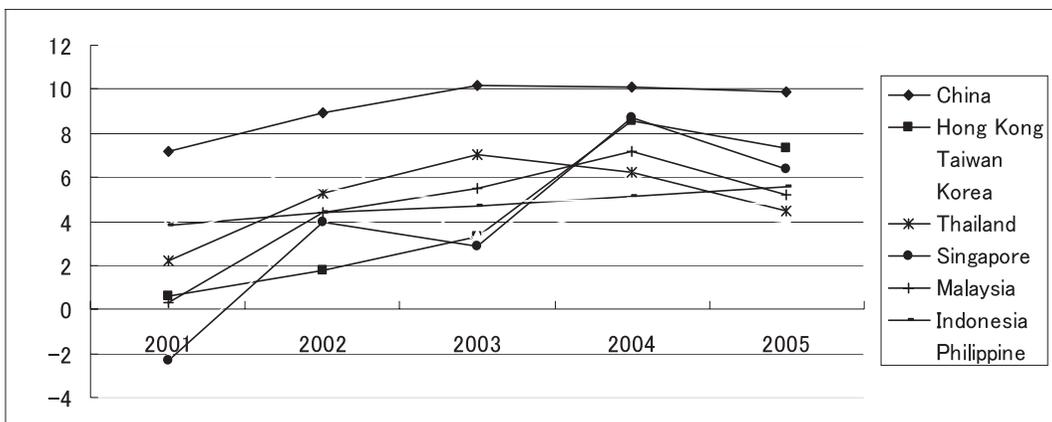
The rise in container production was firmly underpinned by improved global trade growth during 2000 and a record delivery of over 600,000 TEUs of additional vessel slots in the same year. Additionally, the world fleet of containers has reached 336 million TEUs in 2004, representing a year-on-year growth of 12.5 percent.

Figure 5 illustrates the real GDP growth in East Asia from 2001 to 2005 surveyed by IDE-JETRO, Japan. It reveals that the East Asian real GDP growth in 2005 outside Japan increased by 4.0% in Korea to 9.9% in China, 6.4% in Singapore, 7.3% in Hong Kong, 5.2% in Malaysia, 4.5% in Thailand, 4.1% in Taiwan, 4.8% in the Philippines, 5.6% in Indonesia respectively, signaling an upward revision of economic expansion in the region.

As has been demonstrated that the share of East Asia in the world container market has risen to 48.0% in 2003 equal to a massive 143.6 million TEUs, making it the world center of highest intensity of liner shipping operations.

Today, the container throughput in China has been ranking first in the world. Of particular note is

Figure 5. Real GDP Growth in the East Asia (2001–2005)



Source: Ajiken World Trend, No. 135 (2006.12)

that Shanghai port in central east coast and Shenzhen port in South have already ranked 3rd and 4th respectively in 2006. In next decade, the second tier of industrializing countries, say, India, will really begin to make their mark.

Notes

- 1 Major elements which contributed to the phenomenal economic development of East Asia: 1) In most countries of East Asia there is a strong national aspiration toward development which is shared not only by the government but also by the vast majority of the people. 2) In the process of realization of the national aspiration, public and private business sector successfully maintained an efficiently cooperative division of labor and established an export-oriented industrial structure. With few exceptions, East Asian governments demonstrated enlightened leadership with a right set of policy objectives. And at the same time, there was market-oriented private sector dynamism with abundant innovative entrepreneurship. Furthermore, both public and private sectors did not confront each other, rather, they supported each other. 3) Most East Asian countries enjoyed a high savings ratio, which enabled vigorous accumulation of domestic capital. Additionally, labor ethics in general were sound, which generated high productivity. 4) East Asia could enjoy favorable external support. In the first place, the U. S. provided a vast open market for the East Asian exports. It was also the U. S. which guaranteed the security of the region. Japan also played a crucial role in stimulating East Asian economic development by supplying capital, technology and managerial know-how since the 1980's.
- 2 There are two reasons accounting for slowing in economic growth. The first is the failure to reform across the region and the lack of a civil society. The second is the dramatic blow to growth that Asia will suffer from a fast and furious hi-tech recession in the U. S. In addition, Asian countries remain saddled with bad assets and debts. Most have dysfunctional institutions and markets to allocate capital.

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