

**Foreign Direct Investment  
And  
APEC Economic Integration**

June 1995

APEC Economic Committee

**Canada, especially Industry Canada, acknowledges the assistance of other APEC member economies, in particular the delegates and Chairman of the Economic Committee, for providing direct investment data and comments on the first draft of the paper presented at Yogyakarta, Indonesia, in September 1994. We could not obtain reliable trade and direct investment data for Papua New Guinea and Brunei Darussalam.**

**It should be emphasized that the foreign direct investment (FDI) data in this report are generally based on two different sources - FDI approvals/notifications and balance of payments. These two types of data are not strictly comparable. However, given data limitations, data from the two different sources are often aggregated to examine the trends and geographic patterns of FDI of host and home countries. The FDI tables (Tables 21-31) were prepared by making use of direct investment data from various national and international sources, adjusting for consistency as much as possible. The responsibility for the numbers rests solely with the authors. However, a major objective of our initial effort in developing the FDI database for the APEC region is to focus the future research of APEC towards the development of a more comprehensive and systematic database, based on a standard definition of FDI.**

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## I. INTRODUCTION

The APEC region has more than 2 billion people and the combined GDP of the fifteen APEC member economies in 1992 was more than US\$ 12 trillion. Together, these member economies account for about 50 percent of world population, output, trade, and direct investment stock, and their importance as an economic region is increasing.

Within APEC, the twelve Asian economies are expanding at a much faster pace than the five non-Asian APEC member economies. Yet, their per-capita income levels (except for those of Japan, Hong Kong and Singapore) remain well below the levels of the non-Asian APEC member economies. However, the Asian APEC member economies have made substantial economic progress in improving their relative position during the post-war period.

Growing trade and investment linkages with other APEC member economies and non-APEC countries should result in faster adoption and diffusion of new product and process technologies, increase competition and dynamism, and raise relative productivity and real incomes in all Asian APEC member economies in the near future. In addition, increased integration of these economies/countries, especially the People's Republic of China (hereafter the PRC) and the Association of Southeast Asian Nations (ASEAN) countries, with the other APEC member economies would facilitate increased specialization in all APEC member economies and allow the member economies to reap the full benefits of specialization, and scale and scope economies.

In short, APEC, especially the Asian part, is the most populous and most dynamic region in the world today and has huge potential for substantial increase in their productivity and income levels.

A number of interrelated global trends in the 1980s, especially in the second-half of the decade, have increased considerably the pace of regional and international economic integration. Liberalization of trade and investment flows, multilaterally, regionally and bilaterally; dramatic improvements in communication and information technologies; rapid changes in product and process technologies and in the comparative advantage position of countries; shorter product cycles; and fierce international competition for markets, capital and technology have all contributed to the globalization process. Foreign direct investment and transnational corporations have played major roles in this process. Between 1986 and 1991, world direct investment outflows increased at the rate of 24 percent per year, compared to world output and export growth rates of only 9 and 12 percent, respectively.

A previous APEC study of Foreign Direct Investment (FDI) by Dobson, W. Safarian, A.E. and Chia Siow Yue (1993) strongly suggested that FDI is also playing a dominant role in the growing economic integration of APEC member economies, especially among Asian and non-Asian APEC member economies and within the Asian group of countries. It seems that increased investment linkages are contributing considerably to the strengthening of trade, financial, and technology linkages among APEC member economies.

At present, there are no reliable and consistent time series data available on inward and outward direct investment stocks and flows among the APEC member

economies. This places serious constraints on our ability to understand the dynamics of economic integration in the APEC region. The principal objective of this study is, therefore, to build on the earlier work of Dobson, W. Safarian, A.E. and Chia Siow Yue (1993); to develop a reasonably consistent direct investment database for the APEC region; to examine in some detail the trends in investment linkages among APEC member economies during the 1980-1992 period; and to examine their relationship to trade flows.<sup>1</sup>

The following are the main objectives of this study:

- to develop a time series database of direct investment flows and stocks for the APEC region during the period 1980-1992;
- to analyze the growth dynamism of APEC member economies;
- to examine the role of trade and direct investment in APEC member economies;
- to investigate trends in intra-regional investment linkages between Asian APEC and non-Asian APEC member economies as well as within these two sub-groups of APEC and to discuss investment linkages with non-APEC countries;
- to analyze the linkages between APEC trade and investment; and
- to examine the implications of direct investment-led economic integration for market framework policies and laws.

For analytical purposes we divided the fifteen APEC member economies, for which we obtained trade and direct investment data, into two broad groups: Asian APEC and non-Asian APEC. Asian APEC in turn is sub-divided into four groups: Japan, the PRC, the Newly Industrialized Economies (NIEs) (Republic of Korea (ROK), Hong Kong, Chinese Taipei, and Singapore), and four of the ASEAN countries (Malaysia, Thailand, Indonesia and the Republic of the Philippines). The five non-Asian APEC member economies are divided into two groups: North America (United States, Canada and Mexico) and ANZ (Australia and New Zealand).

The report is organized as follows. Section II examines the growth dynamism and diversity of APEC member economies. The growing importance of trade and direct investment to APEC member economies is analyzed in Section III. Section IV investigates the trends in APEC trade and investment and examines the relationship between trade and investment in these economies. The final section, Section V, summarizes the main findings of the study and examines the implications for market framework laws and policies.

## **II. DIVERSITY AND DYNAMISM OF APEC ECONOMIES**

### ***Introduction***

Total trade of APEC member economies was more than US\$ 3.1 trillion in 1992, slightly more than that of the European Union (EU). But, the combined GDP of APEC member economies was almost US\$ 12.4 trillion, compared to only US\$ 6.9 trillion for the EU. In addition, the combined population of APEC member economies in 1992 (2.1 billion people) was more than six times that of the EU, suggesting a huge market potential in the APEC region.

APEC, however, is a heterogeneous group of member economies. Enormous diversity exists among the member economies in terms of the size of population and GDP, the industrial structure of production and trade, resource endowment, level of economic development and living standards, technological sophistication, and outward orientation.

### ***Population***

The population of APEC member economies varies from a low of 0.3 million people in Brunei Darussalam to almost 1.2 billion people in the PRC (see Table 1). The Asian APEC member economies account for more than four-fifths of APEC's 2.1 billion people. As a result, this region offers huge export market potential for both APEC member economies and non-APEC countries. These economies and countries represent one of the most populous and fastest growing regions in the world.

The PRC, the most populous country in the world, has about 1.2 billion people, about ten times the population of the next two populous Asian countries, Indonesia and Japan, each with a population exceeding 100 million. In contrast, the two member economies, Hong Kong and Singapore, have fewer than 10 million people. The four NIEs together have about 73 million people, compared to more than 335 million people in the four ASEAN countries.

The U.S., with 255 million people, is the second most populous member economy in APEC after the PRC, and accounts for two-thirds of the non-Asian APEC population of 393 million. Mexico's population, at about 80 million, is larger than the combined population of the NIEs. New Zealand's population of 3.3 million ranks closely with Papua New Guinea (PNG) and Singapore, and is considerably smaller than Australia's 17.5 million population.

### ***Economy Size and Living Standards***

Per-capita income, measured in market exchange rates, varies from a meagre US\$ 374 in the PRC to a high of more than US\$ 29,000 in Japan. The five Organization for Economic Cooperation and Development (OECD) countries (U.S., Canada, Japan, ANZ) and Hong Kong and Singapore are similar in terms of their economic development, as measured by per-capita income, and are much more advanced than the other APEC member economies (see Table 1).<sup>ii</sup>

The five non-Asian APEC member economies accounted for approximately 60

percent of APEC GDP in 1992, compared to their population share of only 19 percent. However, the U.S. is the dominant player in APEC. It accounted for almost 50 percent of APEC GDP and more than 80 percent of non-Asian APEC output.

Japan is the predominant economy in Asian APEC. Its GDP of almost US\$ 3.7 trillion is more than two and one-half times the combined total of other Asian APEC member economies. The PRC, with the second highest level of GDP in Asian APEC (US\$ 435 billion), is only slightly more than a tenth of the size of the Japanese economy. The NIEs and ASEAN countries individually do not have sizable domestic markets, but their combined GDP in 1992 was nearly US\$ 1 trillion, more than the combined output of Canada and Mexico (see Table 1).

### ***Growth Record***

Between 1980 and 1992, real GDP growth in Asian APEC member economies averaged 4.8 percent per year, more than double the rate in the non-Asian APEC member economies (see Tables 1 and 2). Within Asian APEC, the real output of the PRC grew at an exceptional rate of 9.2 percent a year, or almost twice the average growth rate of the entire Asian APEC region. Economic growth of the NIEs averaged almost 8 percent, while output of the ASEAN countries expanded at an average rate of only 5.5 percent. The growth record of the Republic of the Philippines, Brunei Darussalam and PNG was an exception to the Asian growth miracle. For instance, the Republic of the Philippines GDP grew at a meagre 1.3 percent per year, significantly less than its population growth rate of 2.4 percent, resulting in a per-capita real income decline during the decade.

In addition, in the 1980s, real GDP growth exceeded population growth in all APEC member economies by significant margins (with the exception of Brunei Darussalam, PNG, Mexico and the Republic of the Philippines), resulting in considerable improvements in per-capita real incomes. Asian APEC member economies experienced the most success in this regard. Real per-capita income in Asian APEC member economies grew at an average annual rate of 3.3 percent during the 1980-1992 period, compared to only 0.8 percent in non-Asian APEC and 1.4 percent in the EU. The fastest growth in real incomes occurred in the ROK and PRC, at about 8 percent per year. Among developed APEC member economies, Japan led the way in per-capita income growth during this period (3.4 percent); followed by Australia and Canada (1.2 percent); the U.S. (1.1 percent); and New Zealand (1.1 percent) (see Table 1).

As a result of the faster growth of per-capita real incomes in the Asian APEC member economies, the relative differences in per-capita income levels among APEC member economies have narrowed considerably in the post-War period. For instance, Japan's per-capita income, measured in Purchasing Power Parity (PPP) exchange rates, increased from a mere 17 percent of the US level in 1950 to over 80 percent in 1990. Similarly, during this period, the other Asian economies, particularly the NIEs, gained considerable ground over the U.S. and Canada (see Table 3). The phenomenon of the narrowing of income level gaps among economies is often referred to by economists as economic convergence.

### **Possible Explanations of Economic Convergence**

As mentioned above, recent research by the World Bank and others shows that the post-War growth performance of industrialized countries and the Asian APEC member economies is consistent with the economic convergence thesis. This theory postulates that if the "follower" countries (those with lower levels of productivity and real incomes) pursue appropriate micro- and macro-economic policies, they should be able to improve their real incomes faster than the "leader" country (the technology and productivity leader). This is because they enjoy the "opportunities of backwardness". The follower countries can emulate the leader's production technologies and management practices and achieve very high rates of output and real income by increasing investments in infrastructure, physical capital and R&D, without running into diminishing returns. Similarly, the scope for rapid structural change and improvement in competitiveness and comparative advantage positions are much larger in follower countries than in the "leader" country. In short, the convergence thesis asserts that having relatively low levels of productivity and per-capita income carries the potential for rapid advancement in the future.

There is some evidence indicating that the rapid diffusion of "frontier" technologies in the Asian APEC member economies over the last thirty years or so, particularly in Japan and the NIEs, has contributed in a significant way to the process of economic convergence.<sup>iii</sup> A 1988 study showed that in many production processes, the technology used in the ROK and Chinese Taipei was either equivalent to that used in Japan, or would be equivalent in the next five years.<sup>iv</sup> In contrast, the technology gap between the PRC on one hand, and the NIEs and ASEAN countries on the other, is substantial. However, this technology gap could plausibly narrow significantly over the next two decades or so as the PRC strengthens its trade and investment linkages with other APEC member economies, especially Japan, the U.S. and the NIEs (see Section IV of this paper).

A number of studies have attempted to explain the phenomenal growth of Asian APEC member economies and the resulting convergence of their real incomes toward the levels of the developed market economies. These studies show that the convergence process is not automatic. Instead, both the level and speed of economic convergence depend on a number of important economic factors. The marked expansion of exports, high savings and investment rates, low-external debt servicing payments, a well-educated, well motivated, and skilled work force, flexible and dynamic factor and product markets, outward-looking and market-oriented economic development policies, well developed infrastructure and economic institutions, and a stable political climate, seem to have contributed to the Asian growth miracle.<sup>v</sup> This research attributes the large cross-country differences in real income growth rates among developing countries (including Asian APEC member economies) over the past 30 years to differences in three major factors: savings and investment rates, growth in exports, and levels of human capital (proxied by the secondary school enrolment rate).

It seems that economic integration and outward orientation - in particular increased importance of FDI and trade flows in the APEC economies - played a significant role in the convergence process.<sup>vi</sup>

### **Investment and Savings Rates**

A necessary, though not sufficient, condition for a country to improve its long-term growth potential is to significantly increase its rate of savings and investment.<sup>vii</sup> Developing countries are expected to finance a large part of their substantial investment in infrastructure and physical capital (structures and machinery and equipment) during the early stages of their economic development, through foreign borrowing. The experience of Asian APEC member economies generally conforms to this norm. Rapid GDP growth in the Asian APEC member economies has been accompanied by relatively high shares of investment in GDP, financed partly by high domestic savings and partly by foreign borrowing.

Aggregate savings and investment rates, on average, are substantially higher in the Asian APEC member economies than in the non-Asian APEC member economies. In 1992, the investment rate averaged 31.6 percent in the Asian APEC member economies, more than twice the rate of the non-Asian APEC member economies. More importantly, the domestic savings rate in the Asian APEC region exceeded its investment rate by a significant margin. These excess domestic savings were made available to other countries, especially to the non-Asian APEC member economies (see Table 4).

Between 1980 and 1992, the investment rate increased substantially in the PRC, the ROK and three of the four ASEAN countries. The domestic savings rates of these countries have also increased significantly during this period. However, the increase in domestic savings was not sufficient to fully finance the large increase in investment in the ROK and Thailand, resulting in significant foreign borrowing (See Table 4).

In 1992, the savings rate exceeded the domestic investment rate in three of the four NIEs. As a group, the NIEs' savings rate exceeded the investment rate by 3.0 percent in 1992, compared to a resource gap -5.0 percent of GDP in 1980 (i.e. the investment rate exceeded the savings rate in 1980). In the ROK, both the savings and investment rates increased markedly between the two years. However, the savings rate fell slightly short of the investment rate in 1992, resulting in some foreign borrowing. In Japan, the large domestic savings rate in conjunction with a slight decline in the investment rate led to a considerable net foreign lending and direct investment abroad (see Table 4).

Household or personal savings as opposed to corporate or government savings account for the bulk of high domestic savings in Japan, Chinese Taipei and the ROK.<sup>viii</sup> Various factors explain the high savings propensity among households: the occupational composition of households - i.e. a large proportion of non-farm self-employed persons with high savings propensities; the "bonus" effect stemming from the large portion of transitory income in total wage income in these countries which increases the savings rate because of the higher savings propensity of transitory income; limited consumer credit; absence of social security; and, a cultural proclivity to save.<sup>ix</sup>

A notable feature of investment in Asian APEC is their high share of private investment relative to other low- and middle-income economies. A World Bank Report indicates that the ratio of private investment to GDP for 1970-1989 in Asian APEC (excluding Japan and the Republic of the Philippines) was on average 7 percentage points higher than in other middle-income economies.<sup>x</sup> Private investment in these countries rose from about 15 percent of GDP in 1970 to nearly 22 percent in 1974, then

declined and held at about 18 percent between 1975 and 1984. Private investment contracted sharply between 1984 and 1986, reflecting the global recession, then recovered by 1988. In contrast, private investment in other low- and middle-income economies has remained relatively low at about 11 percent of GDP.

The share of public investment in GDP of Asian APEC member economies has generally been counter-cyclical to the reduction in private investment, which is in sharp contrast to the experience of other middle-income economies. For example, while fiscal contraction of macro-economic adjustment in the 1980s resulted in lower public investment rates in most middle-income economies, the public investment shares of the Asian APEC member economies as a group actually rose between 1979 and 1982 and remained at nearly 14 percent - 4 percentage points higher than in the 1970s. Only after 1986 did they begin to decline toward historical levels.

The World Bank Report [1993] also indicates that the drain of external debt servicing on foreign exchange earnings is negligible in Japan, Hong Kong, Singapore, Chinese Taipei, and Malaysia. In addition, debt service charges as a percentage of exports are low in Indonesia, the ROK and Malaysia (less than 20 percent) compared to some other developing areas (in Latin America, for example, they are in excess of 35 percent). These factors are generally conducive to attracting foreign investment flows to the Asian APEC region.

Unlike Asian APEC, both savings and investment rates declined significantly in all the non-Asian APEC member economies between 1980 and 1992. The average savings rate of this group of countries declined from 19.4 percent in 1980 to 15.5 percent in 1992. In addition, the decline in the savings rate was larger than the decline in the investment rate, necessitating increased foreign borrowing (see Table 4).

### **Growth of Exports**

Asian APEC member economies, by and large, have pursued an aggressive export-led growth strategy rather than import protection. Although most Asian APEC member economies, with few exceptions, passed through an import-substitution phase, with high and variable protection of domestic import substitutes, these periods ended earlier than in other economies, typically because of a compelling need for foreign exchange. Rather than preserve foreign exchange through stricter import controls, the NIEs and ASEAN countries set out to earn additional foreign exchange by increasing exports.<sup>xi</sup>

Thus, rapid growth of exports has been one of the major contributing factors to the phenomenal growth of output, real incomes, and productivity in the Asian APEC member economies. Between 1980 and 1992, merchandise exports from the region increased at an average annual rate of about 10 percent, compared to only 6 percent in the non-Asian APEC member economies (see Table 1).

Within Asian APEC, the PRC, the NIEs, Thailand and Malaysia have enjoyed very high average export growth, ranging from 10.4 to 15.7 percent per year during the 1980-1992 period. Japanese exports during this period grew at an annual rate of 7.9 percent. On the other hand, Indonesia (3.1 percent), the Republic of the Philippines (4.1 percent), and PNG (4.8 percent) experienced low rates of export growth. In Brunei

Darussalam, on the other hand, exports declined substantially between 1980 and 1992. Unlike the large divergence found in export growth rates in the Asian APEC region, the growth rate of merchandise exports was more or less similar across the non-Asian APEC member economies (see Table 1).

## **Factors Contributing to Rapid Export Growth**

### **Export Composition**

What factors could account for the superior export performance of Asian APEC member economies? Did changes in the commodity composition of exports play a role? Manufactured exports account for almost 90 percent of merchandise exports of Asian APEC member economies. However, the reliance of the ASEAN countries and the PRC on primary exports is substantially higher than in Japan and the NIEs. Japan concentrates heavily on high-tech and high value-added manufactured products (machinery and equipment, and chemicals). NIEs exports consist of mostly light machinery, consumer goods (electronics) and labour-intensive manufactured products. However, the share of high-tech and high value-added products in total trade has increased rapidly over the last 25 years. On the other hand, the PRC and the ASEAN countries' exports are dominated by resources, resource- and labour-intensive manufacturing products and light machinery.<sup>xii</sup>

The remarkable growth of manufactured exports from Asian APEC member economies could be attributed to four main factors: the liberalization of world trade and investment flows and increased global economic integration; low wage rates; superior productivity and cost performance; and the high quality of their exports.

### **Compensation Levels**

Average compensation levels probably play a role in the export success of these countries as well. Although the productivity levels of the Asian APEC member economies (except Japan) are still well below the Canadian and U.S. levels, their manufactured exports remain highly cost competitive because of very low wage costs. For instance, the hourly compensation in manufacturing in the NIEs was less than 20 percent of the Canadian level in 1988. Consequently, their unit labour costs were less than one third of the Canadian and U.S. costs.<sup>xiii</sup> The absolute labour cost advantage could be even higher for the PRC and the ASEAN countries.

### **Exchange Rate Movements and Cost Competitiveness**

Nominal exchange rates (relative to the U.S. dollar) varied a great deal across APEC member economies during the 1980-1992 period - from an average annual depreciation of more than 50 percent of the Mexican peso to about 11.5 percent appreciation of the Japanese yen. However, nominal changes in exchange rates, in general, were in line with variations in relative inflation rates. As a result, the variations in real exchange rates were considerably smaller than the variations in nominal rates (see Table 5).

Did the variations in real exchange rates improve the cost competitiveness of Asian APEC member economies vis-a-vis the non-Asian APEC member economies,

especially the U.S., during the 1980-1992 period? The answer is mixed. Japan, Hong Kong, Chinese Taipei, Singapore and Papua New Guinea experienced real appreciation in the value of their currencies during the 1980s (ranging from 0.4 percent to 26 percent), resulting in a deterioration in their relative costs position vis-a-vis the U.S. On the other hand, other Asian countries benefited from a real depreciation of their currencies - between 3 to 179 percent. Between 1980 and 1992, the PRC and Indonesia experienced the largest real depreciation of their currencies (between 107 and 179 percent). Depreciation of the real exchange rate in the ROK, Malaysia, Thailand and the Philippines did not occur in the same magnitude as in Indonesia and China. However, exchange rate policies in Malaysia and Thailand were liberalized and currencies frequently devalued in order to support export growth.<sup>xiv</sup> Among non-Asian APEC member economies, real appreciation occurred in Canada only (7.7 percent); all other non-Asian APEC member economies experienced a real depreciation of their currency relative to the U.S., ranging from a low of about 8 percent in New Zealand to a high of 16 percent in Australia (see Table 5).

In short, between 1980 and 1992, exchange rate movements considerably improved the cost competitiveness position of the PRC, Indonesia, Malaysia, Thailand, the Republic of the Philippines, Mexico, Australia, New Zealand, and to a much lesser extent, the ROK vis-a-vis the U.S. At the same time, the cost position of Japan, Chinese Taipei, PNG and Canada deteriorated substantially relative to the U.S.

In summary, the APEC market, with more than over 2 billion people, has tremendous growth potential. All Asian APEC member economies, with the exception of the Republic of the Philippines, enjoyed very rapid growth rates in output and real incomes in the post-War period and gained significant ground over the industrialized countries. Despite the impressive gains, their per-capita real income levels remain well below the levels of most OECD countries. According to the economic convergence thesis, this implies that with the possible exception of Japan, Hong Kong and Singapore, the rest of Asian APEC is likely to outperform the OECD countries over the next quarter century or so, provided they continue to follow appropriate micro- and macro-economic policies and strengthen their trade and investment linkages with countries inside and outside of the APEC.

### **III. INTERNATIONALIZATION OF BUSINESS AND APEC MEMBER ECONOMIES**

#### ***Introduction***

A number of factors have contributed to the internationalization of business, or globalization as it is often called. The liberalization of trade, direct investment, and financial flows under successive GATT Rounds and various regional trade and investment arrangements (both formal and informal) are principal among these factors. Working in conjunction with liberalization has been a number of interrelated trends such as dramatic innovations in communication and information technologies, rapid changes in product and process technologies, shorter product life cycles, and increasingly fierce global competition for markets, skills, capital and technology.

The competitive position of Multinational Enterprises (MNEs), and the economic survival of many small- and medium-sized firms increasingly depend on their ability to innovate, penetrate and compete in regionally and globally integrated markets. In addition, firms operate under difficult conditions of rising R&D costs and shorter product life cycles. Hence, these costs must be recouped over a shorter time span through greater volume and larger production runs. These developments have intensified the pace of globalization as MNEs increasingly look to secure and expand market access, and obtain critical product and process technologies through greenfield investments, international acquisitions, joint ventures, and strategic and technological alliances.

Increased trade and investment linkages between countries also fuelled the economic convergence process that, as noted earlier, characterizes the experiences of most Asian APEC member economies in recent years. Freer trade and investment flows influence globalization and convergence through a number of channels. They permit the full utilization of productive resources; they allow economies to reap the full benefits of international specialization, capital accumulation, and scale and scope economies; they facilitate the transfer of technology and best-practice production, organizational and managerial techniques; they permit the broadening of comparative advantage, the minimization of costs through out sourcing, and the international spillover of knowledge and know-how.

In the previous section, we noted the phenomenal growth of merchandise exports from the Asian APEC member economies. Some of the factors behind this growth were also examined including export composition, compensation rates, exchange rate movements and cost competitiveness. In this section, we will examine in some detail the trade and investment patterns evident in the APEC member economies in recent years. The outward orientation (openness), of APEC member economies will be gauged by measuring export orientation, import penetration, the importance of foreign direct investment for domestic capital accumulation and the shares of inward and outward foreign direct investment stocks in GDP.

### ***Trade Orientation***

In 1992, APEC member economies, on average, exported 13.1 percent of their GDP, compared to 21.6 percent in the EU. However, the small overall export propensity of APEC masks a wide diversity across individual APEC member economies: in 1992, the share of exports in GDP in APEC varied from a low of 8.0 percent in the U.S. to a high of 137 percent in Singapore (see Table 6).

The average export propensity of economies in the Asian APEC region was 17.7 percent in 1992, compared to only 9.8 percent in the non-Asian APEC member economies. Within Asian APEC, the NIEs and the ASEAN countries, on average, depend much more on exports than the two largest Asian countries: Japan and the PRC. In 1990, the share of exports in Japanese GDP was only 9.4 percent, compared to an average of 55 percent among the NIEs and 35 percent among the ASEAN countries. The Chinese export propensity, while increasing by more than three fold - from 6.5 percent in 1980 to 19.9 percent in 1992 - was still well below the average levels of the NIEs and the ASEAN countries (see Table 6).

The importance of exports also varies considerably across the five non-Asian APEC member economies. The share of exports in GDP averaged a mere 8.0 percent in 1992 in the world's largest economy, the U.S. Smaller non-Asian APEC member economies, on the other hand, are relatively more export dependent, with export-to-GDP ratio ranging from 9.2 percent in Mexico to a high of 25.4 percent in Canada.

Mexico experienced a significant increase in its export propensity in the 1980s, as was the case for the PRC in Asian APEC. Mexico's share of exports in GDP increased sharply in the 1980s as it made considerable progress in diversifying its export base in response to declining oil prices, the consequent deterioration in terms of trade, and the ensuing debt crisis in 1982. The share of primary products (fuels, minerals and metals) in Mexico's total export earnings fell from 73 percent in 1980 to 42 percent in 1990, while the corresponding share of manufactured exports rose from 12 percent to 45 percent during this period.<sup>xv</sup> The remarkable shift in the composition of exports was achieved through a series of major trade liberalization measures between 1985 and 1988, coupled with other structural adjustment measures (privatization, investment liberalization) as well as other stabilization policies to complement trade reform.

The pattern of import penetration (share of imports in GDP), as expected, is very similar to the pattern of export orientation across APEC member economies. In 1992, APEC member economies, on average, imported 12.4 percent of their GDP, compared to 22 percent in the EU. As with exports, the average import propensity of the Asian APEC member economies (14.8 percent) is significantly higher than the non-Asian APEC member economies (10.7 percent). The average import propensity of the NIEs and the ASEAN countries were also considerably higher than the other APEC member economies (see Table 6).

Meanwhile, in terms of trends, the PRC, Mexico and the ASEAN countries recorded large increases in their import propensities in the 1980s. On the other hand, the import propensities of Japan, all of the NIEs (except Hong Kong) and PNG declined considerably during this period.

In short, Asian APEC's overall dependence on trade exceeds that of non-Asian APEC by a considerable margin. In 1992, merchandise trade accounted for 32.6 percent of GDP in Asian APEC compared to 20.6 percent in non-Asian APEC. By comparison, the trade propensity for the EU was almost twice as high as in APEC (see Chart 1).

The NIEs and the ASEAN countries, on average, exhibit a relatively higher trade dependency than the other APEC member economies. Dependence on trade is the least in the U.S. and Japan (see Table 6). Asian APEC member economies as a group also enjoyed a large merchandise trade surplus of 2.9 percent of their total GDP in 1992. In contrast, Mexico recorded a whopping trade deficit of 9.6 percent of its GDP.

The unusually large trade orientation (between 250 and 300 percent of GDP) of the two city states - Hong Kong and Singapore - is primarily a reflection of the large amount of entrepôt trade in those economies. Both member economies serve as important trade channels to the rest of the world for the PRC and the ASEAN countries, respectively. A considerable amount of merchandise re-exports takes place from these countries, which explains why their respective export and import propensity ratios are well above 100 percent.

### ***Importance of Inward and Outward Foreign Direct Investment***

The APEC region accounts for a significant share of global direct investment activity. In all APEC member economies, FDI liberalization has arguably been the most important policy trend since the 1990s, as part of broad-based efforts to attract foreign investors. This trend is embedded in a broader liberalization movement - covering international trade in goods, external financial transactions, transfer of technology and, more recently, services - that seeks to enhance economic efficiency through the elimination of market distortions caused by restrictive discriminatory governmental measures. The rapid growth of exports, in particular manufactured exports, from the NIEs, ASEAN and China in part can be attributed to the acquisition of technology through openness to FDI and licensing which were crucial for achieving rapid productivity growth.<sup>xvi</sup>

The remainder of this section highlights the trends in the relative importance of APEC and the major sub-regions in global inward FDI flows during the 1980s, the share of inward FDI flows in domestic capital formation, and the importance of the activities of MNEs to the economies of the host and home countries, indicated by the ratio of inward and outward FDI stock to GDP, respectively. It is important to note at the outset that FDI data are not strictly comparable across all APEC member economies mainly due to the fact that member economies differ in their definition of FDI, the method of data collection are not similar across all regimes, and accounting practices and valuation methods differ between member economies. The limitations of the FDI data are discussed in greater detail in Appendix B.

### **Foreign Direct Investment Inflows**

During the 1987-1992 period, total world inward flows of FDI averaged US\$ 172 billion per year, compared to just US\$ 57 billion in the 1981-1986 period. APEC member economies attracted 46.7 percent of the world's total inward FDI flows during the 1987-1992 period, compared to the EU's 44.4 percent. However, between 1987 and 1992, APEC member economies steadily lost their share of global inward FDI flows to the EU. APEC's share declined from 60.3 percent in 1987 to 35.7 percent in 1992. The opportunities and fears associated with Europe 1992 ("Fortress Europe") might have contributed to the dramatic increase in the EU's share. On the other hand, the share of EU almost doubled during this period (see Table 7).

All of the decline in APEC's share of the world's inward FDI flows was due to the decline in the U.S. share - its share of world inward FDI flows declined from 41.2 percent in 1987 to only 7.0 percent in 1992. The large slowdown in U.S. economic growth, the deterioration in its cost competitiveness position, and the increased attractiveness of the EU market (as a result of Europe 1992) could explain the decline in the U.S. share.

On the other hand, the share of Asian APEC member economies in total world inward FDI flows rose sharply from 8.2 percent in 1987 to 19.5 percent in 1992. Within Asian APEC, the ASEAN countries and the PRC experienced large increases in their shares of world FDI flows. The share of ASEAN countries increased more than five fold between 1987 and 1992. Similarly, the PRC's share rose from 1.6 percent in 1987 to 6.8 percent in 1992. In 1992, the PRC was the second largest FDI recipient in the world (following the U.S.) and the largest FDI host country among the developing countries, accounting for nearly three-quarters of the increase in FDI flows to the developing world during that year.<sup>xvii</sup>

The rapid expansion of domestic markets, liberalization of trade and investment policies, low-cost production, rich natural resources and a well educated and well motivated labour force could explain the FDI boom in the PRC and the ASEAN countries over the past decade.

Japan accounted for a meagre 0.4 percent of total world inward FDI flows in 1992. A large number of formal and informal barriers to FDI and trade flows in Japan and its huge trade surplus could account for the relatively low share of global FDI flows into Japan. Unlike the ASEAN countries, the share of world FDI flows going to the NIEs remained more or less stable at around 4 to 5.5 percent during the 1987-1992 period. Marked improvement in the savings\investment imbalance of the NIEs (as reflected in the huge improvement in their merchandise trade balance) could explain their reduced dependence on foreign capital.

## **FDI Inflows and Domestic Capital Formation**

The importance of FDI flows to domestic capital formation increased dramatically in all APEC member economies during the 1986-1992 period (except Japan and Malaysia). Overall, the share of FDI flows in the domestic capital formation of APEC member economies increased from an average of 1.9 percent during the 1981-1985 period to 3.8 percent during the 1986-1991 period. However, the role of FDI flows in domestic capital formation varies a great deal across APEC member economies. It ranges from a low of 0.1 percent in Japan to a high of 29.4 percent in Singapore (see Table 8). Inward FDI flows also play a much more significant role in the domestic capital formation of non-Asian APEC member economies than Asian APEC member economies (see Chart 2). Between 1986 and 1991, inward FDI flows as a percent of gross domestic capital formation averaged 5.7 percent in the non-Asian APEC member economies. Meanwhile, in the Asian APEC economies it averaged only 1.4 percent.

The increased importance of FDI flows in APEC member economies is a reflection of increased trade and investment linkages among them, increased specialization of production and increased commercial relations with non-APEC countries.

FDI flows tend to be very volatile and pro-cyclical. The stock of FDI at any given point, on the other hand, is the accumulation of past FDI flows. Hence, inward and outward direct investment stocks in relation to GDP provide a more accurate and reliable picture of trends in the true importance of direct investment in APEC member economies.

## **Inward Foreign Direct Investment Stock**

The share of APEC inward FDI stock in APEC GDP averaged 7.4 percent in 1992 (see Table 9). The importance of inward FDI stock, as expected, differs considerably across APEC member economies. In 1992, the share of inward FDI stock in GDP ranged from a meagre 0.7 percent in Japan to 75 percent in Singapore. It was more than 20 percent in Australia, New Zealand, Indonesia, Malaysia, Hong Kong and Singapore. In contrast, it was below 10 percent in the PRC, Japan, Chinese Taipei, the ROK, the Republic of the Philippines and the U.S. Overall, inward FDI stock represents a more significant share of GDP in non-Asian APEC (9.0 percent) than in Asian APEC (5.2 percent).

Between 1980 and 1992, the share of inward FDI stock to GDP increased dramatically in all APEC member economies except Canada and the ROK. As a result, the share of APEC inward FDI stock in APEC's GDP increased sharply, rising from 4.0 percent in 1980 to 7.4 percent in 1992. During this period, the importance of inward FDI stock in output more than doubled in the ASEAN countries, the U.S., Mexico, Japan, the PRC, ANZ. On the other hand, the share of FDI stock declined slightly only in Canada.

## **Outward Direct Investment Stock**

Similarly, the stock of outward direct investment increased from 5.7 percent of APEC GDP in 1980 to 8.7 percent in 1992. The share of outward direct investment stock in GDP also varies a great deal across APEC member economies, ranging from a low of 0.3 percent in the PRC to 45 percent in Hong Kong in 1992. The outward direct investment stock to GDP ratio was over 10 percent in Canada, Japan, Hong Kong, Singapore, ANZ. In contrast, the ratio was below 1 percent in Mexico, the PRC, and Thailand. While a sharp divergence between Asian APEC and non-Asian APEC is found in terms of their respective share of inward FDI stock in GDP, outward direct investment as a share of GDP is roughly the same for the two major APEC sub-regions (See Table 9).

More importantly, in the 1980s, the shares of outward direct investment stock in GDP also expanded considerably in all of the APEC member economies (except the U.S.). The importance of outward direct investment stock to the economy more than doubled in Mexico, Japan, the PRC, the ROK, Hong Kong, Singapore, Chinese Taipei, Indonesia, Malaysia, Thailand, the Republic of the Philippines, ANZ. Canada, also recorded substantial increases in its ratio of outward direct investment stock to GDP. The share increased only slightly in the U.S. (see Table 9). The rise in the importance of inward and outward direct investment stocks increased considerably the ratio of total direct investment stock to GDP in both Asian APEC and non-Asian APEC member economies (see Chart 3).

## **Industrial Distribution of FDI Stock**

Although the manufacturing sector still accounts for a significant proportion of inward FDI stock in many APEC member economies, the importance of the tertiary sector, including finance and insurance, construction, trade and commercial services, to FDI stock has increased dramatically during the past 20 years or so (See Table 10). This is true of the NIEs where, in the ROK, for instance, the tertiary sector share of inward FDI stock increased from 19 percent in 1976 to almost 38 percent in 1988. In the PRC, the importance of the manufacturing and tertiary sectors in the inward FDI stock has increased dramatically in the last 10 years or so, at the expense of the primary sector. In the PRC, the combined manufacturing and tertiary sector shares of inward FDI stock increased from about 33 percent in 1983 to almost 92 percent in 1988 (see Table 10).

The increased importance of the tertiary sector in the inward and outward stock of FDI in many of the APEC member economies is consistent with the rising share of the service sector in GDP in these countries and worldwide (see Table 11) and with the liberalization of financial services in these countries.

Unlike the NIEs, in the resource-abundant ASEAN countries, the primary sector is still a major recipient of FDI (except Thailand). In 1988, the share of the primary sector in total inward FDI stock ranged from about 28 percent in Malaysia and the Republic of the Philippines to 82 percent in Indonesia. In addition, the share of FDI going to the primary sector in the ASEAN countries has either remained constant or increased during the last fifteen years.

As with the NIEs, the share of the tertiary sector in total inward foreign direct

investment stock has increased considerably in all five non-Asian APEC member economies and Japan in the last fifteen years, at the expense of the primary and secondary (manufacturing) sectors (see Table 10).

Similarly, during this period, the share of the tertiary sector in the outward direct investment stock has increased considerably in all these countries.

### ***Summary***

The Asian APEC member economies (with the exception of Japan) depend much more on trade than the non-Asian APEC member economies. While direct investment plays a significant role in all APEC member economies, it appears that currently it is most significant to the non-Asian APEC member economies. In the 1980s, the importance of trade and direct investment in the domestic economy increased dramatically in the PRC and Mexico.

The share of FDI flows in domestic capital formation increased markedly (more than doubled) in most of the APEC member economies during the second half of the 1980s. Likewise, the shares of direct investment (both inward and outward) stocks in GDP also increased substantially in most of these countries.

The manufacturing and tertiary sectors account for much of the FDI stocks in all APEC member economies, except in the ASEAN countries. In addition, during the last fifteen years, the share of the tertiary sector in direct investment (both inward and outward) stocks increased considerably in the NIEs, the PRC, Japan, the non-Asian APEC member economies, and, to a lesser extent, in Thailand.

The growing importance of both inward and outward direct investment stocks in APEC and the increasing share of the tertiary sector in these stocks strongly points to the increasing product specialization in all APEC member economies, the strengthening of trade and investment linkages between APEC member economies, and the growing commercial relations between APEC member economies and non-APEC countries.

## **IV. APEC ECONOMIC INTEGRATION**

### ***Introduction***

FDI and trade linkages among countries significantly raise the overall efficiency and real incomes of both home and host countries in various ways: increased specialization; scale and scope economies; technology transfer; international spillovers of knowledge and ideas; increased innovation and competition; broadened areas of competitive advantage; and stimulation of trade, to name a few.

The previous section analyzed the trends in the overall openness of APEC member economies, as measured by export orientation, import propensity, the share of FDI flows in capital formation and the ratio of FDI (inward and outward) stocks in GDP.

This section will examine the evolution of APEC member economies' trade and investment linkages with other APEC member economies as well as with non-APEC countries in the 1980s. It also investigates the inter-relationship between trade and investment, the two vehicles of APEC economic integration.

To achieve these research objectives, the country/regional distribution of APEC exports, imports, and inward and outward direct investment stocks are analyzed and examined. The similarity (correlation) of APEC member economies' trade and direct investment patterns in 1980 and 1990 and the correlation between changes in trade flows and direct investment stocks are also studied and discussed.

### ***Trade Linkages***

The country/regional distribution of APEC exports, imports and total merchandise trade for 1980, 1990 and 1992 are recorded in Tables 12 to 20. The rows in these tables represent the country/region (percent) distribution of exports/imports/total trade of individual APEC member economy and non-APEC country. The last row of these tables, however, gives the shares of individual member economy/country in world exports, world imports and total world merchandise trade.

#### **APEC's Role in World Trade**

The share of APEC member economies in total world merchandise trade rose from under 32 percent in 1980 to almost 41 percent in 1992. However, more than 80 percent of the increase in APEC member economies' share was due to the increased importance of Asian APEC (the NIEs and PRC), in world trade. In 1992, total trade of Asian APEC member economies accounted for 21.5 percent of world trade, compared to the 19.4 percent share of non-Asian APEC member economies (see Table 12).

Within Asian APEC, the share of the NIEs and the PRC in world trade increased dramatically (more than doubled) between 1980 and 1992 (see Tables 12 to 14). Rapid economic growth, the huge absolute cost advantage, and improved relative cost position of these countries due to the real exchange rate depreciation and increased specialization are factors that could explain the phenomenal growth of their exports and imports. On the other hand, the shares of Japan and the ASEAN countries in world trade recorded only moderate growth.

The North American share of world trade increased from 16.3 percent in 1980 to about 18.0 percent in 1990 and 1992 (see Tables 12 and 13). The U.S. accounted for almost 70 percent of the increase in the North American and non-Asian APEC shares of world trade. The rise in the U.S. share of world trade, however, was primarily due to the increase in its share of world exports (see Tables 18 and 20). The substantial improvement in U.S. cost competitiveness, due to real depreciation of its currency, especially vis-a-vis Canada, Japan and the EU could explain its improved export performance. The share of ANZ in world trade on the other hand, remained constant at 1.4 percent.

### **Trade Patterns**

Between 1980 and 1992, the importance of intra-APEC trade in APEC trade increased considerably. The share of intra-APEC trade increased from about 58 percent in 1980 to more than 70 percent in 1992 (see Tables 12 and 14).

### **Asian APEC Member Economies**

The importance of Asian APEC member economies in total APEC trade increased substantially during the 1980s. The share of Asian APEC member economies in APEC trade increased from 27 percent in 1980 to 38 percent in 1992 (see Chart 4). Similarly, trade linkages among Asian APEC economies strengthened considerably during this period. The share of intra-Asian APEC trade in total Asian APEC trade increased from 35 percent in 1980 to 46 percent in 1992. The NIEs accounted for more than 80 percent of the growth in intra-Asian APEC trade shares (see Chart 5).

Asian APEC's trade linkages with the U.S. and CANMEX (Canada and Mexico) remained more or less stable during this period, while the share of trade with the ANZ declined very modestly. In sum, Asian APEC trade linkages with non-Asian APEC member economies on average, remained virtually unchanged between the two periods while that with the EU strengthened significantly. On the other hand, the share of all other countries (Rest of World (ROW)) in Asian APEC trade declined dramatically, falling from 28 percent in 1980 to less than 14 percent in 1992.

Between 1980 and 1992, Japan's trade linkages with both Asian APEC and non-Asian APEC member economies strengthened considerably. The APEC share of Japanese total merchandise trade increased to 66 percent by 1992, a rise of 13 percentage points. The Asian APEC share of Japanese trade rose from 25 percent to 32 percent during this period, the bulk of which was accounted for by a substantial increase in importance of the NIEs in Japanese trade (see Tables 12 to 14). The NIEs share of Japanese total merchandise trade jumped from 10.6 percent in 1980 to 18.7 percent in 1992. On the other hand, the share of the ASEAN countries in Japan's merchandise

trade declined. The U.S. accounted for all of the increase in the share of the non-Asian APEC member economies in Japanese trade. Outside of APEC, the share of the EU also increased significantly, rising from 9.6 percent in 1980 to 15.9 percent in 1992 (see Tables 12 and 14). The increase in the shares of APEC member economies and the EU came at the expense of a huge drop in the share of the ROW. Relatively much slower economic growth in these countries and the large decline in real commodity prices could explain the sharp drop in the ROW share.

Asian APEC member economies accounted for almost 70 percent of total merchandise trade of the PRC in 1992, compared to less than 50 percent in 1980. However, the marked increase in the Asian APEC share was entirely due to the substantial increase in the importance of the NIEs, especially Hong Kong, in the PRC's overall merchandise trade.

In 1992, the APEC share of NIEs' total merchandise trade was almost 75 percent, up from about 65 percent in 1980. The bulk of the increase in the APEC share was primarily due to a significant rise in the importance of Asian APEC member economies, particularly the PRC and the NIEs. Intra-NIEs trade share increased from slightly under 9 percent in 1980 to almost 14 percent in 1992. On the other hand, non-Asian APEC share of NIEs' trade declined somewhat during this period - it fell from about 26 percent in 1980 to just under 25 percent in 1992. Canada and the U.S. recorded slight reductions in their respective shares of NIEs trade during the 1980-1992 period. Similarly, the combined share of ANZ dropped from 2.9 percent in 1980 to 2.5 percent in 1992 (see Tables 12 and 14).

In 1992, the NIEs' trade linkages with the EU more or less remained unchanged in the 1980s. The NIEs conducted about 13 percent of their trade with the EU. The increase in the APEC share, as with Japan and the PRC, came largely at the expense of the huge drop in the relative importance of the ROW countries, whose relative share in NIEs trade fell sharply from 23 percent in 1980 to 12 percent in 1992.

Unlike the other Asian countries, the trade linkages of the ASEAN countries with Asian APEC member economies strengthened only slightly in the 1980s. In addition, ASEAN trade linkages with non-Asian APEC member economies weakened somewhat. The share of the EU in ASEAN trade increased significantly, largely at the expense of a decline in the share of the ROW countries. Similarly, the share of intra-ASEAN trade in total ASEAN trade continued to be small (under 4 percent) and did not increase significantly in the 1980s.

### **Non-Asian APEC Member Economies**

Between 1980 and 1992, the share of non-Asian APEC member economies merchandise trade with both Asian APEC and non-Asian APEC member economies rose sharply, which resulted in strengthening the overall trade linkages with the APEC region as a whole. The stronger trade linkages with APEC occurred at the expense of a substantial fall in the share of the ROW countries as well as a modest decline in the share of trade with the EU (see Chart 6). The share of Asian APEC in non-Asian APEC trade rose from 21 percent in 1980 to almost 29 percent in 1992, which was primarily driven by stronger trade linkages between the U.S. and the Asian APEC member economies, most notably with the NIEs. The rise in intra-non-Asian APEC shares resulted mainly

from stronger intra-North American trade linkages, reflecting the strengthening of regional trade ties by Canada, Mexico and the U.S.

The importance of Asian APEC member economies in the total North American trade, however, improved considerably in the 1980s (see Chart 6). The share of Asian APEC member economies in total North American trade increased from just under 20 percent in 1980 to more than 27 percent in 1992. During this period, both Canada and the U.S. increased considerably their respective trade linkages with Asian APEC member economies. However, in 1992, the U.S. accounted for about 70 percent of total Canadian and Mexican trade, a considerable jump from the 1980 levels. Similarly, the importance of these two economies in American merchandise trade increased significantly during this period. ANZ still account for a small percent (less than 1.5 percent) of North American trade. The substantial increase in APEC member economies' share of North American trade came largely at the expense of a huge drop in share of the ROW countries, which dropped from almost 27 percent in 1980 to just under 15 percent in 1992. Likewise, during this period, trade linkages between North America and the EU weakened somewhat (see Tables 12 and 14).

Between 1980 and 1992, the shares of the Asian APEC and the non-Asian APEC in total ANZ trade increased significantly. In contrast, linkages with the EU and the ROW weakened considerably.

In short, the trade linkages between the Asian APEC and the non-Asian APEC member economies strengthened considerably in the 1980s. Similarly, the importance of intra-Asian APEC and intra-North American trade in the two trade blocks increased substantially.

Relatively faster rates of growth in the APEC region (especially in Asian APEC economies), the complementary nature of trade, increased specialization, very low unit labour costs in the Asian countries (excluding Japan), formal and informal regional trade agreements (Free Trade Arrangement/Agreement (FTA) and the ASEAN) and geographic proximity could have contributed to the increased trade integration among APEC member economies. The strengthening of trade linkages in turn might have created a cycle of increased economic integration by strengthening the intra-APEC FDI linkages.

## ***Investment Linkages: Inward Direct Investment***

### **APEC's Importance in World FDI**

Based on data from host countries, for 1980, 1990 and 1992, the stock of inward FDI in APEC member economies recorded almost a fivefold increase reaching US\$ 908 billion dollars at the end of 1992. However, since the stock of FDI was increasing at phenomenal rates in all countries during this decade, APEC's share of world inward FDI remained stable at about 50 percent. Similarly, the shares of the EU and the ROW also remained constant during the decade at around 40 percent and 10 percent respectively (see Tables 21 and 23).

Non-Asian APEC constitutes the largest recipient of total inward FDI stock among the APEC member economies. Between 1980 and 1992, non-Asian APEC's share of the world's inward FDI stock remained relatively constant at around 35 percent. During the 1980s, however, the U.S. witnessed a significant increase in its share of both APEC and world FDI stock. Much of the increase in the U.S. FDI stock came in large part from Japan. On the other hand, Canada's share of world FDI stock declined considerably (more than halved) during this period. The share of the ANZ region in world FDI stock increased significantly. However, this trend was entirely due to ANZ's share actually fell.

Unlike non-Asian APEC, Asian APEC's share of world inward FDI stock increased by about 5 percentage points since 1980 to 13 percent in 1992. Within the region, shares of world FDI stock increased in all countries except Malaysia and the Republic of the Philippines. ASEAN and NIEs account for much of inward FDI stock in Asian APEC. However, the importance of the PRC has been increasing dramatically, reaching 2 percent of total world inward investment stock in 1992 (see Tables 21 to 23).

### **Investment Patterns of APEC Member Economies**

In 1992, more than 53 percent of the FDI stock in APEC was sourced from the APEC member economies, with roughly equal shares coming from Asian APEC and non-Asian APEC (see Chart 7). The EU accounted for about 35 percent of FDI in the region, while the ROW accounted for the balance of the share (13 per cent). The share of the EU in APEC's FDI stock more or less remained the same in 1980 and 1992 (see Tables 21 and 23).

The decade of the 1980s also witnessed considerable change in the intra-APEC sources of inward FDI going into APEC member economies. The most notable development was a 14 percentage point decline in the share of inward FDI stock sourced from non-Asian APEC member economies, down to 25 percent in 1992 (see Chart 7). The bulk of this fall in relative shares can be attributed to the U.S. while there was a modest decline in the share of Canada and Mexico as well. In sharp contrast, the importance of the Asian APEC region as a source of inward FDI for APEC member economies increased considerably during the 1980- 1992. Japan alone accounted for nearly three quarters of the 16 percentage point increase in the share of Asian APEC in APEC FDI stock between the two periods.

### **Asian APEC Member Economies**

The share of inward FDI stock in Asian APEC which was sourced intra-regionally rose from 42 percent in 1980 to 48 percent in 1992. The share of non-Asian APEC in Asian APEC's inward FDI stock also rose from 20 percent to 22 percent while that of the EU declined by 5 percentage points to 14 percent in 1992. The ROW also increased its relative importance as a source of inward FDI in the Asian APEC (see Chart 8).

In 1992, Asian APEC accounted for 50 percent and 44 of the inward FDI stock in the ASEAN and NIEs countries, respectively. In particular, Japan and the NIEs are the principal sources of FDI in Asian APEC. Non-Asian APEC member economies are more important investors in the NIEs than in the ASEAN countries (see Tables 21 and 23). The U.S. accounts for much of this investment. The EU and the ROW together account for about 30 percent of inward FDI stock in Asian APEC member economies (see Chart 8).

Unlike the ASEAN and NIEs, which receive most of their FDI from Asian countries, almost one-half of Japanese inward FDI stock in 1992 originated from non-Asian APEC, the bulk (90 percent) of which came from the U.S. The EU and the ROW each account for approximately 20 percent of FDI stock in the country. Asian APEC accounts for about 14 percent of FDI in Japan. During the 1980s, the share of APEC investment in Japan declined while the significance of the EU and the ROW increased (see Tables 21 to 23).

In 1992, more than 60 percent of FDI stock in the PRC came from Hong Kong; Japan and the U.S. accounted for an additional 21 percent of the PRC's inward FDI stock. The importance of Hong Kong as a home country for the PRC's inward investment increased considerably during the 1980s, primarily at the expense of Japan and the U.S.

### **Non-Asian APEC Member Economies**

In 1992, Asian APEC member economies accounted for 19 percent of the inward FDI stock of non-Asian APEC member economies, up sharply from 4 percent in 1980 (see Chart 9). Japan alone accounted for 90 percent of the rise in Asian APEC's share, with a significant part of Japanese FDI being destined for the U.S. In 1992, Asian APEC and the EU combined together contributed about 62 per cent of the inward FDI stock of non-Asian APEC member economies. The U.S. is the source of about 16 percent of the FDI stock in North America. At the same time, the U.S. accounted for roughly two-thirds of the FDI stock of both Canada and Mexico in 1992; its relative share of inward FDI in these two economies declined from 70% in 1980. Japan, as a major investor in North America, accounted for almost 23 percent of FDI stock in the U.S. in 1992, up from 6 percent in 1980. The importance of EU and Asian APEC investment in North America increased significantly in the 1980s, whereas the ROW share declined somewhat (see Tables 21 and 23).

In ANZ, almost 60 percent of the foreign direct investment stock comes from APEC member economies; more than one-quarter from just the U.S. (was one-third in 1980). The EU is a major investor in the region but its share declined significantly in the 1980s.

## ***Investment Linkages: Outward Direct Investment***

### **The Importance of APEC Member Economies in World Outward Direct Investment**

Based on data from home countries of FDI, the outward stock of direct investment by APEC member economies amounted to some US\$ 1.1 trillion at the end of 1992. This was well three times the level of outward FDI stock in 1980. However, APEC's share of world outward direct investment stock declined from 59 percent in 1980 to 52 percent in 1992. By comparison, the share of the EU in total world outward investment stock rose from 34 to 39 percent during the same period. Similarly, the importance of the ROW increased somewhat, reaching 9 percent in 1992 (see Tables 24 and 26).

Within APEC, there was considerable change in the balance of world outward direct investment stock attributable to non-Asian APEC and Asian APEC during the 1980s. Specifically, non-Asian APEC experienced a significant decline in its share of world outward direct investment stock, which fell from 50 percent in 1980 to 30 percent in 1992. This fall resulted entirely from a dramatic decline in the relative importance of the U.S. - its share of world outward investment stock shrunk from 45 percent in 1980 to 24 percent in 1992. The share of other non-Asian APEC member economies in world outward direct investment stock (excluding Canada), albeit small in comparison to that of the U.S., increased significantly during the 1980s.

Asian APEC, on the other hand, witnessed a phenomenal increase in its share of world outward investment stock during the 1980s. Its share rose from 9 percent to 22 percent during the decade. This increase was largely due to an 11 percentage point increase in the Japanese share of world outward direct investment during this period. The NIEs also saw their share of world outward direct investment increase considerably, reaching 3.1 percent in 1992. Although the ASEAN countries and PRC also experienced a significant increase in their respective shares, they are not yet major sources of global FDI.

### **Investment Patterns of APEC Member Economies**

In 1992, half of the outward direct investment stock from APEC member economies was located within the APEC region itself, 30 percent in the EU and 20 percent in the ROW countries. In addition, between 1980 and 1992, intra-APEC share of outward FDI stock increased by 10 percentage points, at the expense of a decline in the EU and the ROW shares (see Tables 24 to 26).

North America, primarily the U.S., emerged as the most popular destination of APEC outward investment during the 1980s, accounting for almost 30 percent of APEC outward FDI stock in 1992. However, during this period, the proportion of APEC investment going to Canada declined substantially (more than halved). This development largely reflects the sharp decline in Canada's share of outward U.S. direct investment stock over the course of the 1980s. On the other hand, the importance of Asian APEC member economies, mainly the PRC, the NIEs and the ASEAN increased considerably (see Tables 24 to 26).

### **Asian APEC Member Economies**

In 1992, the NIEs invested about 70 percent of their outward direct investment in Asian APEC member economies, primarily in the PRC, ASEAN and within the NIEs.

Similarly, the ASEAN countries invested mainly in APEC member economies. Approximately two-thirds of their outward direct investment stock in 1992 was in the Asian countries of APEC, mostly in the NIEs and within the ASEAN region itself. However, the importance of non-Asian APEC and EU for NIEs and the ASEAN countries increased substantially in the 1980s (see Tables 24 to 26).

The importance of APEC and EU for Japanese direct investment increased significantly during the 1980-1992 period. During the decade, the share of Japanese direct investment to the U.S. increased considerably while that destined for the ASEAN and NIEs declined sharply.

### **Non-Asian APEC Member Economies**

North American foreign investors demonstrate an equal interest in both APEC and the EU as an investment location (about 38 percent in each region). These trends reflect the importance of the EU market for non-Asian APEC. The importance of Canada to North American investors declined significantly in the 1980s while the shares of Asian APEC member economies and EU countries increased (see Tables 24 to 26).

In 1992, more than half of the outward investment stock from the ANZ region was located in APEC member economies, 41 percent in the EU, and 13 percent in the ROW. However, in 1980, APEC accounted for almost three quarters of direct investment from the ANZ, the EU for one-quarter, and the ROW for 1 percent. Within APEC, the bulk of ANZ investment goes to North America. The share of ASEAN countries in ANZ outward direct investment plummeted in the 1980s (see Tables 24 and 26).

### ***Total Direct Investment Patterns***

Investment linkages between APEC member economies are strong and strengthening. The 1980s have seen the proportion of inward FDI in APEC member economies which is sourced from other APEC member economies increase from close to 50 percent in 1980 to 52 percent in 1992. Moreover, total direct investment share (the sum of both inward and outward FDI stock) within APEC increased by almost 7 percentage points between 1980 and 1992 (see Tables 27 and 29, Chart 10).

The EU is becoming an increasingly important investment partner for the APEC member economies, both in terms of inward as well as total direct investment stock. In 1992, the EU accounted for almost 35 percent of APEC inward investment stock and 32 percent of overall total investment stock (see Charts 7 and 10).

In 1980, non-Asian APEC member economies were linked much more closely through total direct investment (inward plus outward FDI stock) ties with other APEC member economies than were Asian APEC member economies (see Charts 11 and 12). In terms of total direct investment stock, this observation was still true in 1992.

However, a different picture emerges when we consider the inward FDI stock of APEC alone: in this case, both non-Asian APEC and Asian APEC account for roughly 25 to 27 percent of APEC inward FDI stock in 1992 (see Chart 7). A 15 percentage point fall in non-Asian APEC inward FDI stock share and a 16 percentage point increase in the Asian APEC share of inward FDI stock between 1980 and 1992 brought the two sub-regions into balance during the 1980s.

In terms of overall investment linkages, Asian APEC is more strongly linked to non-Asian APEC member economies than to Asian APEC member economies. This represents a reversal from 1980 when intra-Asian APEC links were most significant. In terms of inward FDI stock alone, however, intra-Asian APEC linkages dominate and have dominated since 1980. In terms of overall investment, the EU has become a more significant investment partner for Asian APEC since 1980, accounting for 14 percent of total investment stock in the region in 1992.

Non-Asian APEC, in contrast to Asian APEC, is less dependent on other APEC member economies as investment partners. Dominant investment linkages exist between non-Asian APEC and the EU. Both in overall terms and in terms of inward FDI stock alone, investment linkages between the EU and non-Asian APEC have increased by about 4 percentage points during the 1980-1992 period. As was the case with Asian APEC, the intra-non-Asian APEC investment linkages are the most significant relationships that this sub-region has within APEC. However, both in terms of total direct investment and inward flows alone, the intra-regional linkages have eroded during the past decade. In turn, the significance of linkages with Asian APEC member economies have increased.

Rapid advances in the comparative advantage position of individual Asian APEC member economies, due to closing of technology gaps, large movements in real exchange rates and labour costs, liberalization of trade and investment flows in APEC member economies, and globalization of business by MNEs, appear to have contributed to the increased economic integration among APEC member economies.

### *Possible Explanations*

The most striking development in the sources of inward FDI in the APEC member economies during the 1980s was the emergence of Japan as an important source of FDI for non-Asian APEC member economies, particularly for the U.S. and ANZ. Within Asian APEC, Japan's importance as a source of FDI for the NIEs also increased dramatically between 1980 and 1992; in the interim, the NIEs themselves became an important source of Asian APEC's inward FDI stock (see Tables 21 and 23).

The significant rise in the Japanese share of FDI stock in the U.S. was influenced by a host of factors, of which the rising wave of protectionism in America in the 1980s, the creation of the North American Free Trade Agreement (NAFTA), and the substantial excess Japanese domestic savings were predominant. On the other hand, Japan's increased importance to the NIEs as a source of FDI appears to have been largely influenced by large shifts in the comparative advantage position of home and host APEC member economies.

The sharp yen appreciation following the Plaza Accord of September 1985 triggered a series of responses by Japanese manufacturers to counteract rising cost pressures at home. First, a resurgence of Japanese FDI in Asian APEC's manufacturing sector, especially in the NIEs, was driven mainly by its need to remain cost competitive in order to compete effectively in international markets. FDI by Japanese multinational enterprises (MNEs) grew in the region as part of their long-term systematic globalization strategy, centred on the creation of a regional core network of Japanese manufacturing (OECD 1993). This strategy, in which the output of Japanese manufacturing affiliates is sold in the host market or is exported back to Japan or other regions, acted as a catalyst for rapid Japanese FDI in the region, and in that process, facilitated regional integration.

The comparative advantages of Asian APEC which favoured Japanese FDI included access to natural resources, abundant supply of skilled labour at low wages, geographical proximity, and long historical and cultural ties. In addition, regional integration was facilitated by the creation of duty-free export processing zones (for example in Chinese Taipei and the ROK) and the absence of significant barriers to trade and investment in Singapore and Hong Kong.<sup>xviii</sup>

The upsurge in the importance of the NIEs as a source of FDI in Asian APEC, especially for the ASEAN countries and the PRC, was motivated by many of the same factors contributing to the rise of Japanese FDI in Asian APEC. In the post-1987 period, rising labour costs and currency appreciation in most NIEs, arising from sustained and strong economic growth, caused a deterioration in their comparative advantage position in labour-intensive manufacturing. Thus, cost-push considerations dictated a need to relocate labour and energy-intensive industries to neighbouring countries with abundant low-wage labour and lax labour and environmental standards.<sup>xix</sup> The NIEs provide a good example of ownership advantages that can be acquired through FDI.

The process of redeploying labour intensive manufacturing from higher to lower wage economies in Asian APEC also gained considerable momentum in Hong Kong and Chinese Taipei. It is suspected that a large part of Hong Kong investment in the PRC, a substantial part of which originates in Chinese Taipei, is of this variety.

The NIEs, and to a much lesser extent, the ASEAN countries, are gradually emerging as important direct investors in non-Asian APEC. For the ROK, Hong Kong, and Chinese Taipei, 75 per cent of their outward FDI stock in non-Asian APEC is in North America, the bulk of which is located in the U.S. As in the case of Japan, the rising wave of protectionism in the U.S. has been cited as an important factor for the recent upsurge in outward FDI from the NIEs, thus safeguarding access to one of its major export markets. In addition, the need to gain access to advanced technology has been an important consideration which has accelerated the flow of outward FDI from the NIEs to the U.S.<sup>xx</sup> Investing in industrialized countries allows Asian enterprises to take full advantage of technological spillovers.

### ***Interrelationship Between Trade and Investment Linkages***

Are trade and direct investment complements? The above analysis of patterns of trade and direct investment stock and their trends demonstrates clearly that both the trade and investment linkages among the APEC member economies strengthened considerably in the 1980s. The complementarity between trade and direct investment in the APEC region is also supported by the empirical analysis. In this sub-section, we will examine the interrelationship between the trade and investment patterns of APEC member economies.

In the past, trade and the FDI were viewed largely as substitutes for one another, because much of the FDI was induced by trade protection in host countries. It was argued that multinationals were compelled to locate production facilities abroad in response to tariff and non-tariff barriers to imports in host countries. However, as discussed in sections III and IV, the large increase in FDI flows worldwide as well as among APEC member economies is mainly due to the increased globalization of production, innovation and financing by multinationals. This internationalization of business is largely the result of multinational firms diversifying risk, minimizing costs and maximizing performance through increased specialization taking full advantage of scale and scope economies.

Therefore, the globalization of production and innovation is expected to stimulate trade because of the large and growing importance of intra-firm trade and service flows in the total cross-border activities of multinationals. For instance, 80 percent of North American trade is carried out by multinationals. In addition, recent research suggests that intra-firm trade accounts for nearly 50 percent of all trade between the U.S. and Canada.<sup>xxi</sup> Furthermore, in 1990, intra-firm imports accounted for 75 percent of all imports of the U.S. affiliates of foreign companies.<sup>xxii</sup>

In other words, increased investment linkages among countries will strengthen trade linkages. In turn, these improved trade relations will further strengthen the investment linkages because of two important reasons: increased investments in activities associated with wholesale and retail trade and financial services and increased investments due to improved economic performance of both the home and host countries and increased specialization. In short, more and better investment linkages would strengthen the trade linkages and set in motion a cycle of deep economic integration among countries and improve the economic performance of all nations.

### ***APEC Evidence***

The correlation between the trade and investment patterns of individual APEC member economies in 1980, 1990 and 1992 - i.e. correlation coefficient between the *percentage* distribution of total trade and total direct investment stock - strongly suggests that direct investment and trade are complements, not substitutes.<sup>xxiii</sup> In 1992, the correlation between trade and the FDI shares of all APEC member economies are found to be positive, large and significant. The correlation coefficients vary between 0.768 to 0.995. In addition, the correlation between the two variables is very strong (i.e. over 0.900) for eleven of the fifteen APEC member economies. Moreover, between 1980 and 1992, the correlation between the two variables increased in most of the APEC member economies (see Table 30). Similarly, the correlation between trade and investment linkages for the APEC and the EU regions increased significantly between the two periods.

In addition, the correlation between the percent changes in total direct investment stock (inward and outward) and total trade flows (exports and imports) between 1980 and 1992 is also positive in all APEC member economies. The total elasticity of changes in trade flows to changes in the total direct investment (inward and outward FDI) stock averages about 0.6 for the APEC region (see Table 31). This implies that a 10 percent increase in total direct investment stock increases trade flows by 6.0 percent a year. Nevertheless, the size of the overall trade elasticity with respect to direct investment varies significantly (from 0.3 to 0.8 percent) across APEC member economies. It is generally significantly smaller in the Asian APEC member economies than in the non-Asian APEC member economies. The difference in the two sets of elasticities could be attributed to the differences in the length of experience with direct investment activity. Direct investment (both inward as well as outward) is a more recent phenomenon in all Asian APEC member economies relative to non-Asian APEC member economies. These results are generally consistent with previous findings for both APEC member economies and non-APEC member economies.<sup>xxiv</sup>

## V. CONCLUSIONS AND POLICY IMPLICATIONS

The principal objective of this study has been to develop a reasonably consistent set of data on direct investment for APEC member economies and examine in some detail the investment linkages among APEC member economies and investigate their relationship to the trade linkages.

The following are the main findings of this study:

### **Economic Dynamism:**

- All the Asian APEC member economies, with the exception of the Republic of the Philippines, enjoyed very rapid growth rates in output and real incomes and gained significant ground over the industrialized economies in the post-War period.
- However, the productivity and real income levels in Asian countries, (except Japan, Hong Kong and Singapore) are still well below the levels in the non-Asian APEC member economies
- High savings and investment rates, the rapid growth of exports, the presence of well educated and skilled workers, low labour costs, favourable exchange rate developments, well developed infrastructure, and outward looking and market oriented micro- and macro-economic policies seem to have contributed to the Asian growth miracle.
- The Asian APEC region will continue to outperform the non-Asia Pacific region, because of the very large productivity and technology gaps, provided these countries continue to follow appropriate micro and macro policies and strengthen their trade and investment linkages with countries inside and outside of APEC. In other words, the APEC market, with over 2 billion, has tremendous growth potential.

### **Openness:**

- Asian APEC member economies (except Japan), on average, have a much higher trade propensity than the non-Asian APEC member economies. In the 1980s, the importance of trade in the domestic economy increased dramatically in the PRC and Mexico.
- The share of FDI flows in domestic capital formation more than doubled in most of the APEC member economies during the second half of the 1980s.
- In 1992, the PRC's FDI inflows jumped to US\$ 11.2 billion, from only US\$ 4.4 billion one year earlier, making it the second largest FDI recipient in the world (after the U.S.) and the largest FDI host country in the developing world.
- The shares of the two direct investment stocks (inward and outward) in GDP also increased substantially in most of the APEC member economies during the 1980s.

- The manufacturing and tertiary sectors account for much of the inward and outward FDI stocks in all APEC member economies, except in the ASEAN countries. In addition, the share of the tertiary sector in APEC inward FDI stocks increased considerably in the 1980s.

### ***APEC Economic Integration***

#### **Trade Linkages:**

- Between 1980 and 1992, the trade linkages between the Asian APEC and the non-Asian APEC member economies strengthened considerably. Similarly, the importance of intra-Asian APEC and intra-non-Asian APEC trade in the total trade of these two sub-group of APEC increased substantially. As a result, the share of intra-APEC trade in total APEC trade increased from about 58 percent in 1980 to about 70 percent in 1992.
- Trade linkages between APEC and the ROW declined dramatically in the 1980s while trade linkages with the EU remained virtually the same.

#### **Investment Linkages:**

- In 1992, intra-APEC inward FDI stock accounted for about 50 percent of the total APEC FDI stock, with roughly equal shares coming from Asian APEC and non-Asian APEC.
- In both the ASEAN and the NIEs, the single most important source of FDI was Asian APEC. In particular, Japan and the NIEs are the principal source countries. Non-Asian APEC member economies are more important investors in the NIEs than in the ASEAN countries.
- The shares of Japan and the EU in the total inward FDI stock of the non-Asian APEC region increased considerably in the 1980s. On the other hand, the importance of the U.S. as a source country declined markedly.
- In 1992, almost half of the APEC outward direct investment stock went to other APEC member economies, 30 percent went to the EU and 20 percent went to other countries around the globe. During the 1980s, the shares of APEC and EU increased appreciably at the expense of the decline in the ROW share.

- While APEC as a source region for FDI in other APEC member economies is declining, overall investment linkages between countries in the region are strengthening.
- Within APEC, non-Asian APEC member economies are linked more closely through all direct investment ties with other APEC member economies than are Asian APEC member economies.
- In terms of overall investment linkages, Asian APEC is most linked to non-Asian APEC member economies. In terms of inward flows alone, however, intra-Asian APEC linkages dominate.

#### **Interrelationship Between Trade and Investment Linkages:**

- The following factors seem to have played a major role in shaping the trade and investment patterns of APEC member economies in the 1980s: faster rates of economic growth in APEC member economies, especially in the Asian APEC region; the complementary nature of trade among APEC member economies; very low labour costs in the Asian countries (except Japan); geographic proximity and rapid changes in the comparative advantage position of APEC member economies; cultural affinity of economies in the three APEC sub-groups: Asian APEC, North America and ANZ; regional free trade agreements (FTA, NAFTA, ASEAN and the ANZ); the opportunities and fears associated with the formation of the EU; slower economic growth in the ROW countries; declining real commodity prices; and more importantly the increased investment linkages between the APEC member economies.
- The trade and investment patterns of all APEC member economies showed a strong and positive correlation in both 1980 and 1992, suggesting trade and the FDI are complements rather than substitutes. The trends in trade flows and the two direct investment stocks in APEC member economies in the 1980s also imply complementarity between the trade and investment linkages.
- The total elasticity of trade flows to inward and outward FDI stock for the APEC region averages around 0.6. Nevertheless, the size of the elasticity varies significantly across APEC member economies (between 0.3 and 0.8), with lower elasticity in the Asian APEC member economies.

#### ***Implications***

The strong and growing trade and investment linkages among APEC member economies could encourage further specialization, improve resource allocation and efficiency, and increase the flexibility, adaptability and dynamism of all APEC member economies. The Asian APEC member economies, however, will likely benefit the most from increased economic integration and the convergence process.

Since trade and direct investment are complements, efforts should continue to clarify and relax the rules governing investment and services trade by APEC member economies. Easing impediments to trade and investment flows would greatly facilitate further APEC economic integration.

A receptive domestic environment to increased domestic and foreign competition and rapid structural change in APEC member economies would substantially reduce the adjustment difficulties in the short- to medium-term and accentuate the longer term benefits of increased economic integration to all the countries.

The FDI-led integration of APEC member economies, however, is increasingly making the traditional trade statistics (exports, imports and trade balances) less useful indicators, if not misleading, for purposes of evaluating the competitive position of individual APEC member economies and assessing the fundamental economic trends in the APEC region. This is because of the large and growing importance of intra-firm trade in world trade. For instance, "ownership-based" trade statistics for the U.S. and Japan, constructed by Julius DeAnne, contrast dramatically with the traditional trade statistics.

In addition, increased APEC economic integration would greatly reduce the scope and effectiveness of national market framework laws and policies to influence the structure of the market and the behaviour of market participants.

Consequently, increased trade and investment linkages will create a powerful internal dynamic for policy convergence across APEC member economies. This will increase the need and scope for cooperation and coordination in the formulation and implementation of business framework laws and policies with respect to trade and investment, innovation, competition, intellectual property protection, corporate laws, and consumer protection.<sup>xxv</sup>

While market-led policy convergence, cooperation and coordination are generally beneficial from the global and APEC perspective, they could significantly constrain the policy autonomy of national governments.

Furthermore, the findings of this study strongly suggest that a clear understanding of the dynamic role of the FDI in APEC member economies and economic integration in the APEC region is useful for successfully carrying out the ambitious work program of the Economic Committee of APEC in several key topics: privatization, infrastructure, exchange rate fluctuations, environment, market framework laws and policies, trade liberalization, etc.

## END NOTES

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- i. The paper by Dobson, W. Safarian, A.E. and Chia (1993) analyzes the distribution of inward FDI stock and flow data in each APEC country which originated from other APEC member economies (intra-APEC transactions). Our study updates the FDI data, and more importantly, builds a matrix of the worldwide distribution of both inward and outward FDI stock of each APEC member economy. Thus, in addition to the APEC region, our study analyze the FDI linkages of each APEC member economy with non-APEC regions, which are classified into two sub-regions, namely, the European Union and the Rest of World. A matrix of the worldwide distribution of total trade flows of each APEC country, similar to the FDI stock matrix, is also compiled. By combining total trade and FDI stock data, the paper is able to provide a more comprehensive analysis of the role that trade and foreign direct investment has played in APEC economic integration.
- ii. Some studies have used Purchasing Power Parities (PPPs) to convert member economies' national currency expenditures to a common currency unit (US dollar), thus making real quantity comparisons across member economies possible. For example, Table 3 indicates estimates of real per capita GDP relative to the US level for selected APEC member economies based on PPP exchange rates for different time periods. In general, the data indicate a trend toward a closing of the relative per capita GDP "gap" in most Asian APEC member economies, in particular Japan, Hong Kong and Singapore. Japan's real GDP per capita accounted for about 80 percent of US real per capita GDP in 1990, although in market exchange rate terms it is estimated to be the highest among the APEC member economies in 1992. Similar trends for the APEC member economies are found in the study by Summers and Heston (1992), who estimated, among other variables, real per capita GDP for 139 countries from 1950 to 1988.
- iii. In general, "frontier" technology refers to the "state of the art" technology that results from the successful application of research findings or other scientific knowledge for the creation of new or significantly improved products or processes. Devices or processes which represent an improvement in the "state of the art" are likely to be patentable.
- iv. See Rao (1992), p. 27-28.
- v. See World Bank (1993), Heliwell (1993), and Rao and Magun ((1990).
- vi. To examine the impact of trade and FDI on growth in the APEC region, a cross-country regression of the following equation was estimated.

$$(YGDGP) = \alpha_0 + \alpha_1(PCFDI/GDP) + \alpha_2(XM/GDP)$$

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Where,

YGDPG =The average annual growth rate GDP of each of the fifteen APEC member economies between 1980 and 1992.

PCFDI/GDP =The percentage change in the ratio of inward and outward FDI stock to GDP of each of the fifteen APEC member economies between 1980 and 1992.

X+M/GDP =The ratio of total trade (exports plus imports) to GDP of each of the fifteen APEC member economies for 1992.

The estimates of the regression coefficients with t-statistics in parentheses are as follows:

$$(YGDPG) = 2.8009 + 0.0039 (PCFDI/GDP) + 0.0157 (X+M/GDP)$$

(2.528) (1.8601) (1.9230)

$$R^2 = 0.330 \quad D.W. (1) = 1.860 \quad D.W. (2) = 1.261 \quad F_{2, 12} = 2.954$$

The two explanatory variables, representing an index of openness, are both positive and statistically significant at the 0.05 level of significance. The two variables explain about 33 percent of the variations in the growth rates across the APEC region.

vii. See Solow (1957) and Otani and Villanueva (1988).

viii. See Kuznets (1988).

ix. According to the World Bank [1993], a combination of fundamental and interventionist policies in Asian APEC member economies provided a foundation for high and rising saving rates. First, by avoiding inflation, the Asian APEC member economies have generally offered higher real interest rates on deposits in the financial system than other developing countries. Second, they ensured the security of banks and made them more convenient to small and rural savers. This was largely achieved through strong prudential regulation and supervision, limits on competition, and institutional reforms.

The study also cites interventionist policies which were adopted in some APEC member economies to increase the savings rate. For example, Malaysia and Singapore compelled high private savings rates through mandatory provident fund contributions. Japan, the ROK, and Chinese Taipei all imposed stringent controls and high interest rates on loans for consumer items, and levied stiff taxes on so-called luxury goods. The net effect of policies seem to have been positive: the welfare losses due to forced savings were clearly offset by substantive benefits, as evidenced by the consistently high rates of return to investment.

x. The World Bank study (1993) defines middle-income economies as those with a GNP per capita of more than US\$635 but less than US\$7,911 in 1991. A further

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division, at GNP per capita of US\$2,555 in 1991, is made between lower-middle-income and upper-middle-income economies.

- xi. Hong Kong and Singapore adopted trade regimes that were close to free trade; Japan, the ROK and Chinese Taipei adopted mixed regimes that were largely free of export industries. In the 1980s, Indonesia, Malaysia, and Thailand adopted a wide variety of export incentives while gradually reducing protection. Exchange rate policies were liberalized and currencies frequently devalued, to support export growth. See World Bank report (1993), p. 22-23.
- xii. See Rao (1992).
- xiii. See Rao (1992), p. 20-27.
- xiv. Through pragmatic macroeconomic management, both Malaysia and Thailand have been able to maintain remarkable stability of real exchange rates when confronted with external shocks. See World Bank (1993), *The East Asian Miracle*, p. 114-115.
- xv. See OECD (1994), p. 170.
- xvi. See World Bank (1993), p. 21.
- xvii. See UNCTAD(1994), *World Investment Report 1994*, p. 13.
- xviii. See Oman (1994).
- xix. See Chia (1992), p. 81-84.
- xx. See Chia (1992), p. 84-86. Other factors influencing outward FDI from the NIEs include the need to secure market access in response to the loss of benefits under the US Generalized System of Preferences (GSP) and concern over impending withdrawal of similar benefits by other GSP donors, and the emergence of trading blocs such as NAFTA and the Single European Market.
- xxi. See Eden (1994).
- xxii. See Industry Canada (1994), Working Paper #2.
- xxiii. In order to empirically determine the relationship between trade and foreign direct investment stock in the APEC region, we estimated the following trade propensity equation:

EQUATION I

$$(X+M/GDP) = - 5.7317 + 3.0202 (DINV/GDP) - 4.4678 (TREND) + \\ (0.353) \quad (11.036) \quad (3.217) \\ 59.6061 (DUM) \\ (4.174)$$

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R<sup>2</sup> = 0.772      D.W. (1) = 1.883      D.W. (2) = 2.388      F 3, 41 = 46.377

Where,

X+M/GDP :The ratio of total trade to GDP of each of the fifteen APEC member economies for the years 1980, 1990 and 1992.

DINV/GDP :The ratio of inward plus outward FDI stock to GDP of each of the fifteen APEC member country for the years 1980, 1990 and 1992.

TREND :Time trend with values of "1" for 1980, "10" for 1990 and "12" for 1992.

DUM :A dummy variable with value of "1" for Asian APEC member economies and "0" for non-Asian APEC member economies.

It is a pooled regression of fifteen APEC member economies for the years 1980, 1990 and 1992. The t-statistics of the estimated coefficients are shown in the parentheses.

The estimated equation explains about 77% of the variation in the dependent variable. The estimated coefficient of DINV/GDP turns out to be highly significant and positive, suggesting a strong complementarity between total trade and total direct investment for the APEC region as a whole. In addition, the dummy coefficient is also found to be positive and significant, implying that Asian APEC member economies on average have higher trade propensities than non-Asian APEC member economies.

A second regression equation examines the determinants of knowledge-intensive trade in the APEC region.

### EQUATION II

$$\begin{aligned} (\text{KTRADE}/\text{GDP}) = & - 9.0204 + 0.3419 (\text{X}+\text{M}/\text{GDP}) + 0.45825 \\ & (\text{DINV}/\text{GDP}) + \\ & \quad (0.831) \quad (8.689) \quad (3.963) \\ & 0.0613 (\text{RWAGE}) - 0.3042 (\text{PRIM}) + 13.2534 (\text{DUM}) \\ & (0.624) \quad (1.473) \quad (2.012) \end{aligned}$$

R<sup>2</sup> = 0.948      D.W. (1) = 2.503      D.W. (2) = 2.186      F 5, 39 = 141.484

Where,

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**KTRADE/GDP** :The ratio of exports plus imports from knowledge-intensive industries to GDP of each of the fifteen APEC member economies for the years 1980, 1990 and 1992. Chemicals and related products industry and machinery and transportation equipment industry were considered as knowledge-intensive industries.

**X+M/GDP** :The ratio of total trade to GDP of each of the fifteen APEC member economies for the years 1980, 1990 and 1992.

**DINV/GDP** :The ratio of inward plus outward FDI stock to GDP of each of the fifteen APEC member economies for the years 1980, 1990 and 1992.

**RWAGE** :The hourly compensation cost in each APEC country relative to hourly compensation cost in the US in 1980, 1990 and 1992. This variable is used as a proxy for relative skill levels in the APEC member economies.

**PRIM** :The share of primary industries (agriculture and minerals) in total output of each of the fifteen APEC member economies for the years 1980, 1990 and 1992.

**DUM** :A dummy variable with value of "1" for Asian APEC member economies and "0" for non-Asian APEC member economies.

It is estimated as a pooled cross-section regression equation of the fifteen APEC member economies for the years 1980, 1990 and 1992. The t-statistics of the estimated coefficients are shown in the parentheses.

The explanatory variables account for almost 95 percent of the variation in knowledge intensive trade in the APEC region. According to the regression results, total trade intensity in the APEC region is a significant (at a 0.001 level of significance) and positive determinant of trade of knowledge intensive industries, implying that, other things remaining constant, as the share of total trade in output increases, the proportion of knowledge intensive trade will increase as well. Similarly, total direct investment stock as a proportion of GDP is also positively and significantly (at the 0.05 percent level of significance) related to trade intensity in knowledge intensive goods, and supports the general complementary relationship between technology flows and trade activity. The results imply that the greater the proportion of total output produced by the primary industries, the smaller will be the share of knowledge intensive industries in total trade. Finally, the results also indicate that the share of Asian APEC's knowledge intensive trade in total trade, on average, is higher than in the non-Asian APEC member economies. This result could be attributed to the fact that most Asian APEC member economies are not resource-rich economies.

In sum, the two regression equations strongly suggest that FDI activity increases trade

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and technology flows among APEC member economies.

xxiv. See Globerman (1994).

xxv. For a detailed discussion of these issues, see Canada's paper to APEC (1994): FDI and Market Framework Policies: Reducing Frictions in APEC Policies on Competition and Intellectual Property.

## APPENDIX A

### **Table 1 MAIN ECONOMIC CHARACTERISTICS OF APEC MEMBER ECONOMIES 1992**

Source: The table was compiled using data from the following sources:

*World Tables 1993*, World Bank (1993);  
*World Development Report 1994*, World Bank;  
*World Trade Database*, Statistics Canada;  
*National Accounts, Main Aggregates*, Volume I, 1960-1992, (OECD 1994);  
*International Financial Statistics Yearbook 1994*, International Monetary Fund;  
*Financial Statistics, Taiwan District*, Central Bank of China (Chinese Taipei, June 1994)  
as submitted to the International Monetary Fund;  
*Basic Statistics of the Community*, Eurostat, 28th edition, 1993;  
*Brunei Darussalam Statistical Yearbook 1992*, Ministry of Finance, Negara Brunei Darussalam.

### **Table 2 AVERAGE ANNUAL GROWTH OF REAL GDP, SELECTED PERIODS**

Source: The table was compiled using data from the following sources:

Real GDP growth rates for 1971-1980, 1980-1985, and 1985-1991 were compiled using data from *World Tables 1993*, World Bank; *Taiwan Statistical Data Book for 1992*, Council for Economic Planning and Development, Republic of China (July 1992); *National Accounts, Main Aggregates*, Volume I, 1960-1992, (OECD 1994); Data for 1992 was compiled using data from *International Financial Statistics*, IMF, May 1994; projections for 1993 to 1995 were obtained from *Project Link, World Outlook*, University of Pennsylvania, University of Toronto, and United Nations.

### **Table 3 REAL PER CAPITA GDP LEVEL COMPARISON**

Source: Rao, Someshwar (1992), p. 6.

### **Table 4 SAVINGS AND INVESTMENT RATES IN APEC, 1980, 1990 AND 1992**

Source: The table was compiled using data from the following sources:

*World Tables 1993*, World Bank (1993); and  
*World Development Report 1994*, World Bank;  
*Asian Development Outlook 1991*, Asian Development Bank, Philippines.

The shares of various regions within APEC represent a weighted average of each APEC member country's share of GDP in the specific region.

## **Table 5 EXCHANGE RATES**

Source: The table was compiled using data from the following sources:

*International Financial Statistics Yearbook 1994*, International Monetary Fund;  
*Financial Statistics, Taiwan District*, Central Bank of China (Chinese Taipei, June 1994)  
as submitted to the International Monetary Fund;  
*Statistical Yearbook for Asia and the Pacific 1993*, United Nations.

## **Table 6 SHARE OF MERCHANDISE EXPORTS AND MERCHANDISE IMPORTS IN GDP**

Source: The table was compiled using data from the following sources:

*World Trade Database*, Statistics Canada (see Appendix B).  
*World Tables 1993*, World Bank (1993);  
*Financial Statistics, Taiwan District*, Central Bank of China (Chinese Taipei, June 1994)  
as submitted to the International Monetary Fund;  
*Statistical Yearbook for Asia and the Pacific 1993*, United Nations.

The shares of various regions within APEC represent a weighted average of each APEC member country's share of GDP in the specific region.

## **Table 7 INWARD FOREIGN DIRECT INVESTMENT FLOWS, 1981-1992**

Source: The table was compiled using data from the following sources:

*World Investment Report 1993: Transnational Corporations and Integrated International Production* (UNCTAD 1993);  
*World Investment Report 1994: Transnational Corporations, Employment and the Workplace*, (UNCTAD 1994);  
*Balance of Payments Statistics*, IMF (various issues).

The U.S. data for 1992 appearing in *World Investment Report 1994: Transnational Corporations, Employment and the Workplace*, (UNCTAD 1994) were adjusted, using data from *Survey of Current Business*, August 1994, United States Department of Commerce. For Canada, FDI inflows from 1983 to 1992 include short-term capital flows and reinvested earnings (previously not available), compiled from Statistics Canada. World FDI inflows in UNCTAD (1994) were accordingly adjusted to reflect the modifications to data for the U.S. and Canada.

## **Table 8 SHARE OF INWARD FOREIGN DIRECT INVESTMENT FLOWS IN GROSS DOMESTIC CAPITAL FORMATION**

Source: *World Investment Report 1993: Transnational Corporations and Integrated International Production*, UNCTAD, New York, 1993, p. 251-254.

The shares of various regions within APEC represent a weighted average of each APEC member country's share of gross domestic capital formation in the specific region.

**Table 9 SHARE OF INWARD AND OUTWARD FOREIGN DIRECT INVESTMENT STOCK IN GDP**

Source: *World Tables 1993*, World Bank (1993);  
*International Financial Statistics Yearbook 1994*, International Monetary Fund;  
*Financial Statistics, Taiwan District*, Central Bank of China (Chinese Taipei, June 1994)  
as submitted to the International Monetary Fund;  
*Statistical Yearbook for Asia and the Pacific 1993*, United Nations.

The inward and outward FDI stock data for APEC member economies and other regions were compiled from various national and international sources as outlined in Appendix B. The shares of various regions within APEC represent a weighted average of each APEC member country's share of GDP in the specific region.

**Table 10 SECTORAL DISTRIBUTION OF INWARD AND OUTWARD FDI STOCK, SELECTED APEC MEMBER ECONOMIES**

Source: *World Investment Directory 1992, Volume I: Asia and the Pacific*, (United Nations Centre on Transnational Corporations, United Nations, 1992);  
and,  
*World Investment Directory, Volume III: Developed Countries* (Transnational Corporations and Management Division, United Nations 1993).

**Table 11 DISTRIBUTION OF GDP (AT MARKET PRICES) BY ACTIVITY, APEC, 1975 AND 1990**

Source: The table was compiled using data from the following sources:

*World Tables 1993*, World Bank (1993); and,  
*Taiwan Statistical Data Book for 1992*, Council for Economic Planning and Development, (Chinese Taipei, July 1992).  
*Brunei Darussalam Statistical Yearbook 1992*, Ministry of Finance, Negara Brunei Darussalam.

**Tables 12-20**

Source: Industry Canada compilations using World Trade Database (see Appendix B).

**Tables 21-29**

Source:Industry Canada compilations using various sources (see Appendix B).

**Table 30CORRELATION OF SHARES OF TOTAL MERCHANDISE TRADE  
AND INWARD AND OUTWARD FDI STOCK - 1980, 1990 AND  
1992**

Source:Industry Canada compilations using various sources (see Appendix B).

**Table 31ELASTICITY OF TOTAL TRADE TO TOTAL FDI STOCK**

Source:Industry Canada compilations using various sources (see Appendix B).

## APPENDIX B

### *World Trade Database*

The World Trade Database, constructed by the International Trade Division of Statistics Canada, provides a complete matrix of international trade flows (both exports and imports of goods) for about 170 countries, disaggregated by approximately 800 commodities. These data are annual and cover the period 1971-1992. The original source of the data is the trade data reported to the United Nations Statistical Office by member countries.

Statistics Canada made several adjustments to the original data in order to correct some of the important shortcomings of the United Nation's data. For example, not all countries value their imports and exports in the same way; some value imports c.i.f. (cost, insurance, and freight) and others use f.o.b. (free on board) measurements. Some countries define their territory as within their political boundaries while others use custom boundaries. Trade with entrepot ports is another area where the United Nations does not make adjustments to the data to reflect actual trade activity.

Some of the important improvements that Statistics Canada made to the original U.N. trade data include:

- \*standardization of the measures of a market. It is always based on imports, although its breakdown can come from counterpart exports;
- \*reallocation of exports assigned to entrepot ports to the countries they serve by reference to those countries' import statistics;
- \*creation of geographic groupings for which trade is comparable in cases where reporting countries group individual partner countries differently;
- \*imputation of late non-reporting countries from data reported by counterpart trading partners;
- \*further standardization of the use of the commodity classification; and
- \*balancing of world trade totals by reference to U.N. publications on country import and export totals.

For the purposes of this study, Statistics Canada's World Trade Database was used to compile data on merchandise exports and imports for 1980, 1990 and 1992 for the following APEC member economies and the regional groupings within APEC: North America (Canada, United States, and Mexico), Japan, the People's Republic of China, the Newly Industrialized Economies (NIEs - the Republic of Korea, Chinese Taipei, Hong Kong, and Singapore), the Association of South East Nations (ASEAN) excluding Brunei Darussalam (Indonesia, Malaysia, Thailand, and the Philippines) ANZ

(Australia and New Zealand). In addition, data were compiled for the 12-member countries of the European Union (EU - Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Spain, Portugal, and the United Kingdom), the Rest of World (ROW).

### ***Matrices of Inward and Outward Foreign Direct Investment (FDI) Stock***

The matrices showing the geographical distribution of inward and outward FDI stock data for 1980, 1990 and 1992 for the 15 APEC member economies in our study and the sub-regions were compiled from various national and international sources. The following publications were used extensively in developing the matrices of inward and outward FDI stock for APEC member economies, the EU, and the World totals (Tables 21 to 29).

\**World Investment Directory 1992, Volume I: Asia and the Pacific* (United Nations Centre on Transnational Corporations, United Nations, 1992);

\**World Investment Directory, Volume III: Developed Countries* (Transnational Corporations and Management Division (UNCTC), United Nations 1993).

\**World Investment Report 1993: Transnational Corporations and Integrated International Production* (United Nations Conference on Trade and Development (UNCTAD), United Nations 1993);

\**World Investment Report 1994: Transnational Corporations, Employment and the Workplace*, (UNCTAD 1994);

\**Foreign Direct Investment Relations Between the OECD and the Dynamic Asian Economies*, Bangkok Workshop (OECD 1993); and

\**International Direct Investment Statistics Yearbook 1993* (OECD 1993);

\**International Direct Investment Statistics Yearbook 1994* (OECD 1994);

\*National sources of inward and outward foreign direct investment data.

Inward and outward FDI stock data for the individual APEC member economies and the EU appearing in these publications are based primarily on reports and data submitted by the relevant statistical agencies/ministries/central banks of member countries to the United Nations, OECD, and other international organizations. A country-by-country description of the national data sources which were cited in these publications and a brief explanation of the data is outlined below.

In addition, APEC Economic Committee (EC) (formerly the Economic Trends and Issues Committee) contacts were requested to send data pertaining to the geographical distribution of inward and outward FDI stock for their respective economies for the period 1980-1992. Data received from the APEC-ETI contacts were

used in compiling the matrices of inward/outward FDI stock. In some instances, however, the contacts were unable to respond to our request for data. For those countries, we relied on various international sources as cited above in compiling the FDI matrices for 1980, 1990 and 1992. FDI data for Papua New Guinea and Brunei Darussalam were unavailable for this study, which led us to drop them from the analysis of trade and investment linkages in our paper.

In general, the geographical distribution of inward and outward FDI stock data for the APEC member economies, as obtained directly from APEC-EC contacts or compiled from various national/international sources, were available for 1980, 1990 and 1992. However, for few APEC member economies, the geographical distribution of inward and/or outward FDI stock data were either not available or could not be obtained for the periods covered by our study. For those countries, the FDI stock matrices reflect data for different time periods, or where possible, reasonable estimates of inward/outward FDI stocks for 1980, 1990 and 1992 were derived.

It should be noted, however, inward and outward FDI stock data for APEC member economies have certain limitations. With few exceptions, comprehensive data on inward and outward FDI stock are generally not available for all APEC member economies. Intercountry comparisons of FDI are difficult to make because of differences among countries with regard to the definition of direct investment, differences in national data collection systems, methodology, and accounting system and practices.

In some APEC member economies, only balance of payments **flow** data are available with respect to the geographical composition of inward and outward FDI. In such cases cumulative FDI inflows and outflows are used as a proxy for stocks of inward and outward FDI, respectively. Moreover, FDI stock data of some APEC member economies include reinvested earnings whereas for others the data are simply not available.

In other instances, FDI reflects approval investment data which are compiled by national investment boards or agencies entrusted with the review and/or control of inward and/or outward FDI. Here too, the FDI stock data are usually approximated by cumulative FDI flows that have been approved by the relevant agency or government department of the host country of FDI. Investment approval data neglect the stock of investment in the country prior to the introduction of the investment promotion or review program as well as FDI in sectors excluded from review or notification. A more serious problem with data on investment approvals (or investment notified or registered capital) is that they usually overstate the investments actually implemented. Finally, by focusing on majority or wholly owned affiliates as the basis of FDI, the data fail to incorporate other forms of industrial cooperation of lesser equity significance, such as production sharing arrangements, minority-owned joint ventures, strategic alliances or licensing arrangements which represent important sources of technology transfer (see Dobson, Safarian, and Yue 1993).

Another important caveat concerns the estimates of the world stock of inward and outward direct investment stock. Theoretically, the worldwide inward and outward

stocks should be the same. However, the world stock of inward and outward FDI, unlike the world level of merchandise exports and imports, are not equal in value in view of the fact that there are significant differences in definition, methodology, and accounting practices among countries with regard to FDI. In addition, the conversion of investment data denominated in national currency to a common currency (e.g. in U.S. dollars) at fluctuating exchange rates may lead to distortions. Thus, the gap between the worldwide inward and outward direct investment in any given year could therefore fluctuate by a considerable margin.

Notwithstanding the problems of data comparability and consistency, the FDI stock statistics from the various national and international sources are commonly used for examining trends and patterns of international direct investment. Thus, the matrices of inward and outward FDI stock appearing in Tables 19 to 31 were developed on the basis of the information available to us from the various sources cited above, with the underlying caveat that the FDI data have certain limitations in terms of comparability and consistency. One of the objectives of this study is to solicit the cooperation of APEC member economies in future work involving the development of a comprehensive data on APEC FDI activity which, to the extent possible, is consistent, reliable, and up to date.

The following national data sources of inward and outward FDI stock data were cited in the international publications outlined above. A description of the FDI data is provided for special situations.

### ***Canada***

Source:Canada's International Investment Position 1993, Catalogue 67-202 Annual, and unpublished data.

Notes:The inward and outward FDI stock represent the year-end book value of FDI. Outward FDI stock for 1980 excludes the equity investment in banks abroad of Canadian chartered bank, which are available as of 1983. In addition to capital flows, the inward and outward FDI stock data for Canada include undistributed (retained) earnings, exchange rate fluctuations, write-offs and revaluations of assets, effects of migrations and inheritances, dilutionary effects on equity ownership as a result of new issues of shares by corporations etc. The 1980, 1990 and 1992 inward and outward FDI stock data were converted to U.S. dollars using year-end exchange rates.

### ***United States***

Source:*Survey of Current Business*, (August 1994 and other issues). Bureau of Economic Analysis, U.S. Department of Commerce.

Notes:The direct investment position (stock) of Foreign Direct Investment in the United States (FDIU.S.) and United States Direct Investment Abroad (U.S.DIA) represent the year-end value of the foreign parent groups' (U.S. parents') equity (including retained earnings) in, and net outstanding loans to and

from their U.S. (foreign) affiliates. The position estimates are valued on a historical-cost basis, reflecting prices at the time of the investment.

### ***Mexico***

Source: Director General of Foreign Investment for Mexico's *Secretaria de Comercio y Fomento Industrial* (SECOFI) and the *Banco de Mexico*.

Notes: The inward FDI stock data for 1980, 1990 and 1992 as reported by SECOFI (in U.S. dollars) are based on cumulative approved inflows. The definition of FDI used by Mexico refers to the investments by foreigners aiming to participate on a permanent and effective basis in the management of an enterprise located within the country. The definition includes capital investment, reinvestment and inter-company operations. Such definition complies with the guidelines of the IMF and the OECD.

Mexico does not report official statistics on outward FDI flows or stocks. The data on outward FDI stock for 1980, 1990 and 1992 (as shown in the matrices) were estimated on the basis of inward FDI stock of Mexico, as reported by the respective host member economies of APEC and countries of the EU.

### ***Japan***

Source: *Kaigai Tushi Kenynjo Ho Repot of the Institute of Overseas Investment* (various issues), Ministry of Finance.

Notes: FDI stock data for Japan are not available as such. Data on inward and outward FDI stock are based on the cumulative approved values of specific projects submitted to the Japanese Ministry of Finance (MOF) since 1951, under the Foreign Exchange Control Act (1949). The statistics yield information on both the industry and the partner country involved in each project. The stock (and flow) data exclude reinvested earnings. The data reflecting Japan's inward FDI stock data from Japan itself represent reinvestment of earnings by foreign firms with a foreign equity share of more than 50 percent.

The 1980, 1990 and 1992 inward and outward FDI stock data were converted to U.S. dollars using year-end exchange rates.

### ***People's Republic of China***

Source: Department of International Relations, Ministry of Foreign Economic Relations and Trade (MOFERT), PRC.

Notes: Inward FDI stock data for the PRC are not available as such. Inward FDI stock data are based on utilized cumulative inflows since 1979. Total inward FDI stock for 1980 represents utilized cumulative inflows between 1979-1982; the shares of APEC member economies and EU source countries

in the cumulative utilized inward investments between 1979-1982 was distributed according to the respective member economies'/countries' shares of inward FDI stock in 1985 (inward FDI stock data by source country could be obtained beginning in 1985 only). The 1980, 1990 and 1992 data were compiled from the *Statistical Yearbook of China, 1986-1994*, published by the State Statistical Bureau of the Peoples Republic of China.

MOFERT defines inward FDI inflows as the utilized amounts of foreign capital and the reinvested earnings in wholly owned enterprises, equity joint ventures, contractual joint ventures and joint exploration projects for mineral resources. Utilized FDI in a given year may differ substantially from approved or contracted investments.

The PRC does not report official statistics on outward FDI stocks. The data on outward FDI stock for 1980, 1990 and 1992 (as shown in the matrices) were estimated on the basis of inward FDI stock from the PRC, as reported by the respective host member economies of APEC and countries of the EU.

The 1980, 1990 and 1992 inward and outward FDI stock data were converted to U.S. dollars using year-end exchange rates.

### ***Republic of Korea***

Source: *The Status of Inward Foreign Investment*, Bank of Korea; and *The Status of Outward Foreign Investment*, Bank of Korea.

Notes: Neither inward nor outward FDI stock data for the ROK are available as such. Inward FDI stock for 1980, 1990 and 1992 were estimated as cumulative inflows since 1962, on an approval basis, less cumulative investments withdrawn. The inflows cover new, as well as additional investment in projects already in existence. They are inclusive of reinvested earnings, consisting of reinvested dividends and capitalized reserves.

Outward FDI stock is estimated as cumulative approved outflows since 1968, that is, authorized investments less capital withdrawn since 1968.

### ***Hong Kong***

Source: Various national and international sources on FDI.

Notes: Data on inward FDI stock are available from the *Report on the Survey of Overseas Investment in Hong Kong's Manufacturing Industries*, published by the Hong Kong Government Industry Department. However, since the FDI data pertain only to the manufacturing sector, we had reason to believe that the amount of total FDI stock in Hong Kong may have been seriously understated, given that a considerable amount of FDI is known to be in the tertiary sector. In order to provide a more accurate picture of

total FDI in Hong Kong, the inward FDI stock in Hong Kong for 1980, 1990 and 1992 has been estimated on the basis of the outward FDI stock in Hong Kong from APEC member economies and EU countries, as reported by their respective statistical agencies. For some APEC member economies, data on outward FDI stock (in Hong Kong or otherwise) were not available; in this instance, data from the *Report on the Survey of Overseas Investment in Hong Kong's Manufacturing Industries* were used to approximate the particular APEC country's inward FDI stock in Hong Kong.

As with inward FDI stock in Hong Kong, data on outward FDI stock of Hong Kong in 1980, 1990 and 1992 were estimated on the basis of inward FDI stock from Hong Kong as reported by the respective host member economies of APEC and countries of the EU.

### ***Chinese Taipei***

Source: *Statistics on Overseas Chinese and Foreign Investment*, Investment Commission, Ministry of Economic Affairs.

Notes: Neither inward nor outward FDI stock data for Chinese Taipei are available as such. Inward FDI stock for 1980, 1990 and 1992 are estimated as cumulative approved inflows of foreign investment by overseas Chinese and private foreign investors since 1952, as at the end of each year. Inflow data reflect both new investments and additions to investments already in existence.

Outward FDI stock is estimated as cumulative approved outflows since 1959. The 1980, 1990 and 1992 inward and outward FDI stock data were converted to U.S. dollars using year-end exchange rates.

### ***Singapore***

Source: Department of Statistics, Singapore, unpublished data provided on request.

Notes: Inward FDI stock data for 1980, 1990 and 1992 represent the year-end value of foreign direct equity investment in Singapore. Outward FDI stock for those years represent Singapore's direct equity investment abroad by locally incorporated companies and local branches of foreign companies with overseas investment and/or capital transactions with their overseas subsidiaries, associates and branches. Direct investment abroad by local banks, finance companies and insurance companies are not covered by the data.

Direct equity investment refers to the amount of paid-up capital contributed by direct investors, and the proportionate amount of the reserves attributable to them.

The 1980, 1990 and 1992 inward and outward FDI stock data were converted to U.S. dollars using year-end exchange rates.

## ***Indonesia***

Source:Capital Investment Coordinating Board (BKPM).

Notes:Neither inward nor outward FDI stock data are available for Indonesia. The inward FDI stock data for 1980, 1990 and 1992 represent cumulative approved FDI projects (by country of origin) from June 1967 until the end of December 1980, December 1990 and December 1992, after taking into account cancellations and shifting of projects from foreign to domestic investments. The data for cumulative approved inward FDI flows from June 1967 to December 1980 (in U.S. dollars) were obtained from the *World Investment Directory, Volume I, Asia and the Pacific* (cited above). Similar data for 1990 and 1992 were obtained from *Report of the Financial Year* (various issues), Bank Indonesia. The EU FDI stock in Indonesia reflect investments from Belgium, France, Germany, and the Netherlands and the United Kingdom.

For its data collection purposes, BKMP defines FDI inflow as equity contributions of both foreign and domestic enterprises and loan capital. The Indonesia equity share in joint ventures is, therefore, included in the data on FDI. Equity investments consist of cash and investments "in kind", such as imports of goods and equipment. Data on reinvested earnings are not available. Banking and insurance are excluded from all stock estimates.

Outward FDI statistics are not available from official sources. The 1980, 1990 and 1992 outward FDI stock for Indonesia were estimated on the basis of inward FDI stock attributed to Indonesia by APEC member economies and EU countries.

## ***Malaysia***

Source:Malaysian Industrial Development Authority (MIDA).

Notes:The geographical distribution of inward FDI stock for 1980, 1990 and 1992 reflect MIDA data compiled from *the World Investment Directory, Volume I, Asia and the Pacific* (cited above) and from MIDA data provided by Enterprise Malaysia Canada. The **geographical distribution** of total inward FDI stock, defined as the value of net assets (assets in Malaysia less amounts owed to Malaysian residents) of foreign-controlled limited companies in Malaysia and the value of net assets of Malaysian branches of limited companies incorporated abroad, is estimated by allocating the **total** inward FDI stock among countries in proportion to the share of each country in the cumulative approved foreign equity and foreign investors' shares in total loans in the **secondary sector** (manufacturing sector), as reported by MIDA. Loans attributed to foreign investors are estimated as a share of total loans, the share being the percentage of foreign participation in each project. The total inward FDI stock (as defined above) in Malaysia for 1980, 1990 and 1992 were obtained from

*World Investment Report 1994: Transnational Corporations, Employment and the Workplace*, (UNCTAD 1994).

Outward FDI statistics are not available from official sources. The 1980, 1990 and 1992 outward FDI stock for Malaysia were estimated on the basis of inward FDI stock attributed to Malaysia by APEC member economies and EU countries.

Year-end exchange rates were used to convert stock data denominated in Malaysian Ringgits to U.S. dollars.

### ***Thailand***

Source: Bank of Thailand.

Notes: Inward FDI stock is estimated as cumulative inflows of FDI since 1970 (on a balance of payment basis). FDI inflows, as defined by the Bank of Thailand, consist of equity inflows, net of investments withdrawn (repatriated investments) and intercompany loans, which are defined as loans by foreign affiliates to their parent companies, less repayment of loans by parent companies to their foreign affiliates. Foreign affiliates are generally defined as firms with at least 25 percent equity participation. Reinvested earnings are excluded from all foreign direct investment data.

Outward FDI stock is estimated as cumulative outflows of foreign direct investment since 1978. The Bank of Thailand reports FDI outflows net of Thai investments that have been repatriated.

Year-end exchange rates were used to convert stock data denominated in Thai Baht to U.S. dollars.

### ***Philippines***

Source: Foreign Exchange Department, Banko Central Ng Pilipinas (BSP) - Central Bank of the Philippines.

Notes: Inward FDI stock data for the Philippines is not available as such. The geographic distribution of inward FDI stock data for 1980, 1990 and 1992 represent cumulative foreign direct equity investments **registered** with BSP since February 1970.

BSP treats as FDI those investments made to acquire a lasting interest in an enterprise operating in an economy other than the one of the foreign investor. All foreign corporations with equity investments are required to register with BSP, including those not monitored by the Securities Exchange Commission or the Board of Investments. Foreign equity investments may take the form of cash, investments "in kind" or reinvested earnings. Investments in financial institutions, as well as changes in foreign equity participation of existing corporations are included in the data reported by

BSP.

Outward FDI statistics are not available from official sources. The 1980, 1990 and 1992 outward FDI stock for the Philippines were estimated on the basis of inward FDI stock attributed to the Philippines by APEC member economies and EU countries.

Year-end exchange rates were used to convert stock data denominated in Filipino Pesos to U.S. dollars.

### ***Australia***

Source:*International Investment Position*, Australian Bureau of Statistics, Catalogue No. 5305.0.

Notes: The geographical composition of inward FDI stock data refer to periods ending 30 June, 1980, 1990 and 1992. Inward FDI stock data for 1980 by source countries were obtained from the *World Investment Directory, Volume III, Developed Economies*, United Nations (cited above). Data for 1990 and 1992 were obtained from the *International Direct Investment Statistics Yearbook 1994* OECD (cited above).

The definition of direct investment was changed in 1985/86 and therefore entries from that year are not strictly comparable with entries for previous years. Under the definition of direct investment used in compiling the statistics from 1985/86 on, the concept of direct investment is broadly one of capital invested in an enterprise by an investor (called a direct investor) having a significant influence, either potentially or actually exercised, over the key policies of the enterprise (called a direct investment enterprise); control of 10 percent or more of the ordinary shares of voting stock (or an equivalent equity interest) is generally regarded as indicative of significant influence by an investor. Prior to 1985/86 this threshold was 25 percent.

The outward FDI stock data for 1980 were not available. An estimate of the stock of Australian outward direct investment stock in 1980 in APEC member economies and the EU was obtained on the basis of the inward FDI stock attributed to Australia by APEC member economies and EU countries. Outward FDI stock data for 1990 and 1992 refer to periods ending June 30, 1990 and 1992, respectively.

Year-end exchange rates were used to convert stock data denominated in Australian dollars to U.S. dollars.

### ***New Zealand***

Source: Statistics New Zealand.

Notes: The geographic distribution of inward FDI stock data for 1980, 1990 and 1992 are derived from cumulative FDI inflows since 1951 to March 1981, March 1991 and March 1993, respectively. The geographic composition of inward FDI stock data for 1980 were obtained from *World Investment Directory: Developed Countries, Volume III* (cited above). The inward FDI stock data for 1990 and 1992 were compiled by adding annual flows from source countries from 1985 to March 1991 and March 1992 (as received by Canada from the Ministry of Foreign Affairs and Trade, New Zealand) to the inward FDI stock data (by country) in 1985 (obtained from the *World Investment Directory: Developed Countries, Volume III*).

Outward FDI stock data for 1980 represent cumulative flows of outward FDI since 1970, which were obtained from the *World Investment Directory: Developed Countries, Volume III*. The outward FDI stock data for 1990 and 1992 were compiled by adding annual outflows to the host countries from 1985 to March 1991, and March 1992 (as received by Canada from the Ministry of Foreign Affairs and Trade, New Zealand) to the outward FDI stock data (by country) in 1985 (obtained from the *World Investment Directory: Developed Countries, Volume III*).

Year-end exchange rates were used to convert stock data denominated in New Zealand dollars to U.S. dollars.

### ***The European Union (EU)***

Source: Industry Canada compilations using data from *World Investment Directory: Developed Countries, Volume III* (cited above); and, *International Direct Investment Statistics Yearbook 1994*, OECD (cited above).

Notes: The inward and outward FDI stock data for the EU for 1980, 1990 and 1992 were compiled through extensive use of the two data sources cited above. The EU member countries in our study comprise of Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Spain, Portugal, and the United Kingdom.

The EU's total inward FDI stock in 1980, 1990 and 1992 from APEC and from the EU member countries (intra-EU FDI stock) was compiled on the basis of inward FDI statistics as reported by each EU member country. Of the EU member countries, inward FDI **stock** data were available for France, Germany, Italy, the Netherlands, and the United Kingdom. For the remaining EU member countries, cumulative inward FDI **flows** were used to estimate their respective inward FDI stock.

Inward FDI data for the EU member countries pertain to the following years: For Belgium, Germany, Italy, Portugal, and the United Kingdom, the data were available for 1980, 1990 and 1992. For Denmark and France the data are for 1982, 1990 and 1992; For Ireland, 1981, 1990 and 1992; and

for Spain, 1983, 1990 and 1992. Data on inward FDI in Greece were not available for 1980, but estimates were derived for 1990 and 1992.

The distribution of the EU's total outward FDI stock in APEC member economies and other sub-regions was compiled on the basis of the geographic distribution of outward FDI stock as reported by each EU member country. The outward FDI stock data of the EU member countries were compiled for the same years as that for inward FDI stock. Ireland and Greece were excluded from the computation of total outward FDI stock of the EU due to lack of data for those countries.

In all instances, EU FDI data were converted from national currency units to U.S. dollars using year-end exchange rates.

### ***World***

Source: *World Investment Report 1993: Transnational Corporations and Integrated International Production* (UNCTAD, 1993); and *World Investment Report 1994: Transnational Corporations, Employment and the Workplace*, (UNCTAD 1994).

Notes: The data for world's stock of inward and outward FDI in 1980, 1990 and 1992 were obtained, with some modifications, from the above sources. Our estimate of total inward and outward FDI stock for APEC member economies and EU member countries in 1980, 1990 and 1992 were different than those derived from the above publications. Thus, world inward and outward FDI stock estimates for 1980, 1990 and 1992 as reported in the publications were adjusted to reflect the differences with regard to APEC and the EU.

### ***Rest of World***

Source: The inward/outward FDI stock attributed to ROW in a given year were estimated as a residual, representing the difference between world stock of inward/outward FDI and the sum of inward/outward FDI stock attributed to APEC member economies and the EU member countries.

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