1996

APEC

Economic Outlook

Asia Pacific Economic Cooperation
Economic Committee

1996 Economic Outlook

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Introduction

The Asia-Pacific region has experienced remarkable growth in the post-war era. From 1965 to 1990, per capita output growth in the economies of East Asia exceeded 5 percent per year. By the mid-1990s, the 18 member economies of Asia-Pacific Economic Cooperation (APEC) had a combined annual income of $13 trillion -- or almost 55 percent of total world income. More than 40 percent of global trade now takes place between APEC economies.[1] Rapid growth is expected to continue in the future. Western hemisphere members, such as Chile and Mexico, predict growth rates of 7 and 3 percent respectively, for 1996. The World Bank expects the developing economies of East Asia to grow by 8 percent per year over the next decade. As just one manifestation of the scale of expected growth, these East Asian economies are projected to invest between $1.2 trillion and $1.5 trillion in infrastructure over the next decade.

This report contains information about the economic performance of the APEC region and its member economies. In addition, the report documents the dynamic growth process in the APEC region, identifies what barriers to growth remain, and examines how growth can be sustained and enhanced in the long-term. The report is divided into two sections. The first comprises a brief macroeconomic and structural summary for each economy, including a series of macroeconomic statistics and projections. The second focuses on the growth process itself. It examines each of the factors causing growth -- physical capital investment, labor force development, and total factor productivity -- and discusses the broader issues of structural and sustainable development. By providing the background necessary for assessing policies aimed at improving growth, the second section of the report complements the APEC Economic Committee's *Report on the State of Economic and Technical Cooperation in the APEC Region* (November 1996).

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[1] Calculated from figures provided by the World Trade Organization. *WTO International Trade Statistics*. Geneva: World Trade Organization (1996).

Executive Summary

With a combined annual income of over $13 trillion, the 18-member economies of the Asia-Pacific Economic Cooperation (APEC) accounted for approximately 55 percent of total world income and 40 percent of global trade in 1995. According to World Bank estimates, growth in the East Asian economies is estimated to average 8 percent per year over the next decade, and overall growth in APEC is expected to expand as well. The dynamic APEC region is assuming increased importance in the world economy, and the purpose of this report is to elucidate both recent developments and the long-term determinants of growth.

Although growth rates in early 1996 fell slightly in some of the fastest growing economies, Mexico and Japan started to recover from recent recessions. For the region as a whole, the indicators for 1995 were positive. Overall inflation has fallen to 6.3 percent; the APEC-wide central government deficit fell to 1.8 percent of GDP; and the current account deficit stabilized at 0.7 percent of GDP. Yet, the aggregate numbers conceal regional differences, and the first part of the report examines trends and policies of each individual member.

The 1995 inflation rate of -0.1 percent in Japan, for example, contrasts sharply with the inflation rate of 52 percent in Mexico. Monetary policy in Chile, Hong Kong, Indonesia, Mexico, New Zealand, and Thailand has been tight, while real interest rates have moved to lower levels in the U.S. and Canada over the last year. Japan continues to run a declining current account surplus whereas economies such as Malaysia and Thailand, with large infrastructure projects, have significant deficits.

These short-run macroeconomic fluctuations, however, may be less important to living standards than long-run growth. Part II of the report examines how resources can be most efficiently mobilized to spur long-run growth. Drawing on both theory and evidence, the report explores three components of growth: labor force development, physical capital investment, and total factor productivity.

Labor force developments can contribute to higher output in two ways: through more workers (quantity of the labor force), and through more output per worker (labor productivity). Numerous studies suggest a causal link between education and labor productivity. Economies with better educated workers tend to grow faster. Studies document that economies with the highest initial levels of education in the 1960s grew fastest in the ensuing decades. Notably, the higher-performing Asian economies spent a larger fraction of their GDP on primary education than other APEC members.

Growth rates are also affected by levels of labor force participation. As incomes grow, hours per worker tend to decline; to ensure continued growth in labor input, labor force participation must increase. In the economies of East Asia and the Pacific, increased labor force participation accounted for almost a third of growth in the 1980s; in the United States, increased participation accounted for over half the growth in total output between 1981 and 1995. Falling transportation costs, the removal of discriminatory barriers to woman's participation, and increased provision of child care are all correlated with increased labor market participation.

Although the share of output contributed by physical capital is smaller than the share contributed by labor, capital investment is also critical to growth. Capital investment affects growth rates directly, by increasing the capital-labor ratio, and indirectly, by stimulating technical progress and productivity gains. Empirically, there is a positive correlation between investment and growth. Notably, in the most rapidly growing members of APEC -- the NIEs (Newly Industrialized Economies) -- the share of output devoted to investment exceeds 30 percent.

Although investment has been primarily undertaken by the private sector, public sector reforms have been crucial in fostering a stable environment for private investment and in stimulating infrastructure development. Most effective public sector intervention has been indirect, with the government serving as a coordinator for private providers and protector for poorer and more remote populations. Public policies have encouraged foreign investment by maintaining prudent exchange rates, low tariffs, and an open-oriented economy. Fiscal

responsibility and positive real interest rates have boosted savings, providing the primary source of financing for domestic investment.

The final component of growth, total factor productivity, is the portion that cannot be attributed to labor or capital. Total factor productivity growth, while difficult to measure, stems from technological innovation, resource reallocation to more productive sectors, and increasing returns to scale. There are many ways for governments to support total factor productivity growth, including promoting research and development, establishing pro-competitive market policies, expanding trade, and encouraging foreign direct investment.

Growth as it is conventionally measured does not adequately capture a population's sense and state of well-being. As the Osaka Action Plan emphasizes, the goal of the APEC members is to "support sustainable growth." For example, rapid growth followed by a severe recession is not desirable. Neither is growth that exhausts resources and constrains options for future development paths. The value of many environmental resources -- such as fish populations, clean air, and forests -- are not appropriately priced in the market; the result is often over harvesting, degradation, and denudation. The report examines various efforts to establish environmental and agricultural policies in an effort to promote sustainable growth and sufficient food for a growing population. The report points to the benefits of market-based policies that correct for market imperfections in the pricing of environmental goods.

The report is intended to help policy-makers understand the sources of growth as well as the importance of *sustainable* growth. The ultimate objective of economic policies is to raise living standards, and higher sustainable growth is the key to higher living standards. The APEC process can contribute to better living standards by promoting the sources of sustainable growth through trade, investment and cooperation.

1. Update on the APEC Economies

The APEC region

The APEC region includes some of the world's largest economies as well as some of its most rapidly growing economies. The region thus increasingly constitutes the "center of gravity" for the global economy. The APEC economies are, in general, in robust health, with output estimated to grow by about 4 percent on average during 1996. The fastest growing economies are experiencing moderate dampening of growth, while the slowest growing economies have seen significant recoveries. Some of the fastest growing economies, including Chile, China, Korea, and Malaysia are projected to avoid overheating as growth slows to more sustainable levels. In some other economies, growth is picking up, most notably in Japan and the Philippines, and particularly in Mexico, which is recovering from a recession brought on by its liquidity crisis.

The moderating tendencies regarding activity have generally kept inflationary pressures in check. Inflation is falling in a number of countries, most dramatically in China and Mexico. Inflation has edged upward slightly in only a few economies, and does not appear to be increasing significantly in any APEC economy.

Policy Settings

Monetary policies across the region have recently presented a mixed picture. Although inflationary pressures are not intensifying at present, the persistence of strong growth throughout APEC shifts the balance of macroeconomic risks from recession to inflation. More restrictive monetary policies in some economies can be expected in the near future.

Prudent fiscal policies have no doubt contributed to solid growth and low inflation in APEC. In the United States, for example, the budget deficit has fallen by 60 percent since 1992. Australia, Canada, and Papua New Guinea have also undertaken significant fiscal consolidation measures. Many APEC economies run budget surpluses,

including Chile, Indonesia, Korea, Malaysia, Mexico, New Zealand, the Philippines, Singapore, and Thailand. On the other hand, Japan has run substantial budget deficits in recent years in an effort to stimulate its economy. Infrastructure spending has contributed to an overall fiscal deficit in Chinese Taipei.

External Balance

Capital inflows and large current account deficits remain a concern in some South East Asian economies, most notably Indonesia, Malaysia, and Thailand. Indonesia runs a smaller deficit than the two other economies, but has a larger stock of foreign debt. Capital inflows into Thailand have consisted of largely short-term debt flows. Despite these external imbalances, however, these economies are not experiencing significant increases in inflationary pressures at present. In Malaysia, for example, inflation remained under 4 percent alongside substantial capital inflows.

Export growth in some economies, namely Mexico and the Philippines has remained strong (around 20 percent in 1996), while some Asian developing APEC members have experienced a fall in export growth. This highlights the dependence of many, if not all, APEC members, on external economic factors. The factors, including excess supplies for some electronic goods and appreciating real exchange rates, are likely to be temporary, and growth is likely to remain strong in most of these economies. There is some concern, however, that competitiveness of low-end industries in Southeast Asia has been declining.

Macroeconomic conditions in each APEC economy are reviewed in the first section of the report.

Current Economic Performance and Projections

by APEC Region

Text & Tables summarizing economic performance

and projections from each economy

Australia New Zealand

Australia

GDP. In 1995, Australia recorded the fourth year of its current expansion, posting GDP growth of 3.5 percent. This strong performance has continued in 1996, with the economy growing by 4.5 percent in the year to the June quarter, 1996. Economic activity is expected to remain strong in 1996-97, with GDP forecast to grow by 3.5 percent. The outlook reflects a supportive international environment and sound domestic economic fundamentals, particularly low inflation and relatively high returns on investment.

Inflation. Despite continued strong GDP growth, inflationary pressures have remained moderate. The underlying rate of inflation (which excluded from the Consumer Price Index (CPI) certain items affected by government policy, seasonal factors or high volatility) was 2.7 percent in the calendar year 1995, rising slightly to 3.2 percent in fiscal year 1995 -96. Underlying inflation is expected to fall to 2.75 percent in 1996 -97. The CPI, having risen more strongly in 1995 than the underlying rate, is expected to be relatively subdued in 1996 - 97, rising by only 2 percent, with the different profile largely explained by movements in mortgage interest rates.

Labor Market Conditions. The unemployment rate was 8.5 percent in 1995, down from 9.7 percent for 1994, and well below its peak of 11.2 percent in December 1992. The unemployment rate has moved in a relatively narrow band over 1996, with a rate of 8.8 percent recorded in August 1996. The outlook for the rest of 1996-97 is for moderate employment growth, at a rate broadly consistent with outcomes over recent months, and a gradual decline in the unemployment rate.

Current Account and Exchange Rate. The current account deficit peaked at over 5 percent in 1995 due to the continuing effects of the drought on rural exports in the first half of the year and strong import growth due to strong investment. However, stronger rural exports and improving terms of trade have seen the current account deficit fall to 3.8 percent of GDP in the first half of 1996. The current account deficit is forecast to be 4 percent of GDP in 1996-97. The weakness in the trade-weighted exchange rate evident in the first half of 1995 was reversed during 1995 -96. The current level of the exchange rate is slightly above the average of the past decade.

Fiscal Policy. The Government announced in the 1996-97 Budget its fiscal consolidation strategy aimed at moving the Commonwealth Budget toward 'underlying' balance* , thereby reducing the Commonwealth's call on private saving and providing for enhanced fiscal policy flexibility over the course of the cycle. The budget balance is projected to fall from an underlying deficit of 2.1 percent of GDP in 1995 -96 to 1.1 percent of GDP in 1996-97 (corresponding to a 'headline' budget surplus of 0.1 percent of GDP), and to be in underlying surplus by 1998-99.

Monetary Policy. The Reserve Bank has an objective, endorsed by the Government, to keep underlying inflation between 2-3 percent, on average, over the economic cycle. On 31 July 1996, the Reserve Bank announced a reduction in the overnight official interest rate from 7.5 percent to 7 percent. This was the first change in monetary policy since the second half of 1994, when the official interest rate was increased (in three stages) by a total of 2.75 percentage points. In announcing the July policy easing, the Reserve Bank cited the improvement in the inflation outlook. The Bank expects underlying inflation to shortly be comfortably within the 2-3 percent range and to remain there during 1996-97.

* The underlying budget balance, in contrast to the 'headline' budget balance, excludes transactions which simply involve the transfer or exchange of a financial asset (for example, asset sales.)

Australia

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	377.4	380.1	396.2	417.5	443.7	470.4
Percentage change from previous year						
Real GDP	1.37	-1.18	2.58	3.62	4.81	3.48
Private Consumption	2.61	0.93	3.80	2.44	4.31	4.17
Private Investment	-11.87	-10.79	3.85	5.25	14.61	1.41
Government Consumption	4.52	2.64	1.55	0.32	5.2	3.06
Government Investment	5.31	-4.55	-4.98	-5.73	3.81	3.26
Exports	9.51	7.14	7.13	8.84	4.22	10.87
Imports	.05	-1.21	11.65	10.31	9.11	11.59
Percentage of GDP						
Budget Balance	1.52	-1.44	-2.36	-2.80	-3.58	-1.18
Current Account Balance	-4.92	-3.21	-3.53	-3.54	-5.15	-5.33
FOB Trade Balance	0.13	1.18	.52	-0.06	-1.02	-1.22
Percentage change from previous year						
GDP Deflator	4.38	2.31	1.28	1.33	1.35	2.73
CPI	7.28	3.22	.99	1.81	1.89	4.64
Percentage change from previous year						
Broad Money	6.09	-0.21	1.34	3.82	9.45	8.59
Percent						
Short-Term Interest Rate	14.15	9.96	6.26	5.00	5.69	7.63
In millions						
Population	17.09	17.31	17.51	17.68	17.87	18.09
As percentage of labor force						
Unemployment Rate	6.9	9.6	10.8	10.9	9.7	8.5

Data from the Australian Bureau of Statistics and the Reserve Bank of Australia

Australia

Percentage change from previous year											
	1996						1996-1999				
	official *	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	31/2	3.8	2.7	n/a	3.1	3.7	n/a ***	n/a	n/a	2.3**	3.4
Real Exports	8	n/a	6.5	n/a	7.7	n/a	n/a	n/a	n/a	5.0**	n/a
Real Imports	11	n/a	7.5	n/a	2.4	n/a	n/a	n/a	n/a	2.9**	n/a
CPI	2	2.9	3.8	n/a	n/a	2.9	n/a ****	n/a	n/a	n/a	3.0

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996
* Official forecasts refer to fiscal year 1996-97.
**Data refer to 1997, not 1996-1999
*** Official projections for growth in real GDP are 3.25 percent in 1997-98 and 3.5 percent in both 1998-99 and 1999-00.
**** Official projects for the CPI are 2.75 percent in 1997-98 and 3 percent in both 1998-99 and 1999-00.

Brunei Darussalam

GDP. After moderate performance in the early 1990's, Brunei Darussalam's economy recorded real GDP growth of 2 percent in 1995, up from 1.8 percent in 1994 and 0.5 percent in 1993. The economy has been partially boosted by higher oil prices, in addition to robust growth in the non-oil sector (6 percent in 1995). Both the service and construction sectors are expected to strengthen as a result of the newly implemented Seventh Five Year National Development Plan (1996-2000). Real GDP growth in 1996-97 is forecast at 3.5 percent.

Inflation. Consumer prices rose 6 percent in 1995, up from 2.4 percent the previous year. This upswing in inflation resulted in large measure from import duties on motor vehicles imposed earlier during the year. The CPI for the first quarter of 1996 recorded an increase of 4 percent in comparison to the same quarter in 1995. The inflation rate is expected to fall to 3 to 4 percent by the end of 1996.

Labor Market Conditions. Brunei Darussalam's economy exhibits increasing female labor force participation rates, which are expected to reach 52 percent by 2000. An increasing number of migrant workers help offset labor shortages, particularly in construction-related industries.

Fiscal Policy. The government has run a budget deficit in recent years. In 1995 the deficit totaled 1.6 percent of GDP, reflecting somewhat higher outlays for infrastructure and additional domestic investment. The Seventh National Development Plan aims to partly reduce the deficit by continuing to corporatize and privatize some government activities.

Monetary Policy. Monetary policy has been geared towards controlling inflation during 1995-96 and 1996-97. The rate of M2 growth has decreased from 39.4 percent in 1994 to -3.8 percent in 1995.

Brunei Darussalam

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	6.51	6.62	6.57	6.59	6.69	7.07
Percentage change from previous year						
Real GDP	2.7	4.0	-1.1	0.5	1.8	2.0
Private Consumption	n/a	n/a	n/a	n/a	n/a	n/a
Private Investment	n/a	n/a	n/a	n/a	n/a	n/a
Government Consumption	n/a	n/a	n/a	n/a	n/a	n/a
Government Investment	n/a	n/a	n/a	n/a	n/a	n/a
Exports	5.2	6.4	-8.3	-7.3	-9.4	19.1
Imports	6.3	6.0	25.7	26.4	-9.6	0.7
Percentage of GDP						
Budget Balance	-1.3	-1.1	-5.0	0.3	0.5	-17.1
Current Account Balance	75.9	76.8	66.4	63.6	68.5	57.5
FOB Trade Balance	35.2	36.9	31.2	26.9	14.9	14.1
Percentage change from previous year						
GDP Deflator	1.8	-2.2	n/a	n/a	-0.6	1.8
CPI	2.1	1.6	1.3	4.3	2.4	6.0
Percentage change from previous year						
Broad Money	8.5	4.5	4.3	10.7	39.4	-3.8
Percent						
Short-Term Interest Rate	7.0	7.0	6.0	5.8	6.0	6.5
In millions						
Population	0.25	0.26	0.27	0.28	0.28	0.30
As percentage of labor force						
Unemployment Rate	n/a	4.7*	n/a	n/a	n/a	3.0**

Data taken from IMF sources; International Financial Statistics and World Economic Outlook.
+ Project Link World Outlook, May 3, 1996
* 1991 Census
** Estimate

Brunei Darussalam

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus[o]	official	PECC	ADB	LINK+	con-sensus[o]
Real GDP	3.0		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Real Exports	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Real Imports	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CPI	4.0		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

[o] Blue Chip Private Sector Consensus forecast; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available

Canada

GDP. Real GDP growth slowed to 2.3 percent in 1995 from 4.1 percent in the previous year. The slowdown in the economy during 1995 was primarily due to three factors: the slight slowdown in the U.S. economy over the course of the first half of 1995, a sharp decline in consumer confidence, and the rise in Canadian interest rates during late 1994 and early 1995, which hurt domestic spending. GDP growth remained modest in the first half of 1996, as a sharp inventory correction offset a noticeable strengthening in underlying demand.

Inflation. Inflation remained subdued in the second quarter of 1996, with the GDP deflator up 0.9 percent in the second quarter (year-over-year). The CPI inflation rate rose temporarily in the first half of 1995 because of a rise in world commodity prices and the lagged effects of the earlier exchange rate depreciation on the prices of imported goods. CPI inflation has since fallen from its peak of 2.9 percent in May 1995 to 1.4 percent in August 1996.

Labor Conditions. The unemployment rate has fluctuated around 9.5 percent since early 1995. Declines in public sector employment have partly offset continued growth in private sector employment. Employment rose at quarterly rates of 0.7 percent and 0.2 percent, respectively, in the first two quarters of 1996. In July and August, employment rebounded in industries that are sensitive to changes in interest rates, although overall employment rose only 0.1 percent on average from its second-quarter level.

Current Account and Exchange Rate. The current account balance has improved markedly from a deficit of 3 percent of GDP in 1994 to a surplus of 0.6 percent of GDP in the second quarter of 1996 -- its first surplus since the end of 1984. The key reason for this improvement was a strong increase in the merchandise trade balance. In 1995 and the first eight months of 1996, the Canadian dollar has traded in a narrow band around $0.73 US.

Fiscal Policy. Canada ran large fiscal deficits in the 1980s. The government's fiscal policy is now geared to reducing the deficit to 3 percent of GDP by 1996-97 and 2 percent by 1997-98. To reach that goal, Canada's strategy has been to set two-year rolling deficit targets based on prudent economic planning assumptions and including a Contingency Reserve to ensure that the targets would be met even if economic developments turned out different than expected. The government also brought in substantial fiscal restraint, with the bulk concentrated on reducing discretionary and entitlement spending. To date, the government has met or exceeded its target for the deficit.

Monetary Policy. In February 1991, the government and the Bank of Canada jointly announced a series of inflation-control targets for the consumer price index. In the shorter term and for operational purposes, the Bank focuses on the less volatile "core" rate of inflation, which excludes food, energy and the effects of changes in indirect taxes. The current target range of 1 to 3 percent is in effect until the end of 1998, by which time a decision will have been taken on a future target range that would be consistent with price stability. Canada's progress in keeping inflation low and lowering fiscal and current account deficits has permitted Canadian short-term interest rates to fall 1.5 percent below those in the U.S. after being 2.5 percent higher only 18 months ago. Long-term spreads have also narrowed substantially.

Canada

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	573.8	590.4	571.0	552.6	547.2	565.6
Percentage change from previous year						
Real GDP	-0.2	-1.8	0.8	2.2	4.1	2.3
Private Consumption	1.0	-1.6	1.3	1.6	2.9	1.4
Private Investment	-9.3	-4.6	-3.0	5.2	8.4	1.1
Government Consumption	3.2	2.7	1.0	0.5	-1.7	-.0.7
Government Investment	7.3	4.3	-0.1	0.9	6.4	2.9
Exports	4.1	1.4	7.6	10.4	14.7	12.0
Imports	2.0	3.3	5.6	8.8	11.5	8.7
Percentage of GDP						
Budget Balance	-3.9	-4.5	-4.2	-4.9	-3.8	-3.4
Current Account Balance	-3.8	-4.0	-3.8	-4.0	-3.0	-1.4
FOB Trade Balance	-1.7	-2.2	-1.8	-1.5	-0.8	*0.2*
Percentage change from previous year						
GDP deflator	3.1	2.9	1.3	1.0	0.7	1.5
CPI	4.8	5.6	1.5	1.8	0.2	2.1
Percentage change from previous year						
Broad Money	11.2	6.8	3.6	3.1	2.2	4.1
Percent						
Short-Term Interest Rate	12.8	8.8	6.6	4.8	5.5	7.0
In millions						
Population	27.7	28.1	28.5	28.9	29.2	29.6
As percentage of labor force						
Unemployment Rate	8.1	10.4	11.3	11.2	10.4	9.5

Data taken from IMF sources; International Financial Statistics and World Economic Outlook.

Canada

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK +	con-sensus[o]	official	PECC	ADB	LINK +	con-sensus[o]
Real GDP	1.6	1.5	1.9	n/a	2.1	1.9	2.6*	n/a	n/a	3.6*	2.9
Real Exports	n/a	n/a	7.3	n/a	7.3	n/a	n/a	n/a	n/a	8.2*	n/a
Real Imports	n/a	n/a	4.0	n/a	5.0	n/a	n/a	n/a	n/a	6.8*	n/a
CPI	1.5	1.4	1.4	n/a	n/a	1.6	1.7	n/a	n/a	n/a	1.8

[o] Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996
*Data refer to 1997, not 1996-1999

Chile

GDP. Chile continued to be the top-performing Latin American economy in 1995, in terms of GDP growth. Growth in the first quarter was 9 percent, although the annual growth rate is expected to be a somewhat slower at 7 percent.

Inflation. Chile has made progress in its policy of gradual inflation reduction, achieving a rate decrease from 8.9 in 1994 to 8.2 in 1995. Annual inflation until August was 6.4percent. This decrease was caused by the appreciation of the Chilean Peso, tight financial policies, and weak domestic demand. The accumulated inflation until August is 4.6percent, and the downward trend is expected to continue, so is likely we will reach the target of 6.5 percent for 1996

Labor Market Conditions. Unemployment rose to 7.1 percent for the May-July period. Real wages grew at 4.1 percent, while productivity grew at 7.3 percent. For the first six months of 1996, both indicators grew at 5.8 percent.

Current Account and Exchange Rate. Chile experienced a slight current account surplus in 1995. However, the trends of the previous years will continue and forecasts indicate a sustainable deficit of around 3 percent of GDP for the present year. The real exchange rate decreased 6 percent in 1995. For the first semester of 1996 this reduction remained the same.

Fiscal Policy. Government finances were in surplus in 1995, and they will remain so in 1996. Total public expenditure went up in 1995, due mainly to increased outlays in infrastructure and education, but it grew less than GDP, reflecting an austere fiscal policy that will be continued this year. At the same time, however, revenues were boosted, in part by the strong growth of copper-related earnings.

Monetary Policy. Monetary policy was tight throughout 1995, allowing Chile to escape the Mexican crisis relatively unscathed. The central bank will continue to target interest rates on indexed assets.

Chile

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	30.40	34.41	42.75	45.66	52.16	67.29
Percentage change from previous year						
Real GDP	3.3	7.3	11.0	6.3	4.2	8.5
Private Consumption	0.4	8.9	11.6	8.1	4.4	11.7
Private Investment	4.0	1.6	26.0	12.5	1.0	19.0
Government Consumption	1.1	4.3	5.3	3.3	2.3	2.3
Government Investment	-3.5	25.9	23.8	22.0	11.5	6.7
Exports	9.7	10.7	13.5	4.2	8.2	11.4
Imports	3.6	8.5	23.5	11.2	5.1	22.2
Percentage of GDP						
Budget Balance	0.8	1.5	2.2	1.9	1.7	2.5
Current Account Balance	-1.8	0.3	-1.6	-4.6	-1.2	0.2
FOB Trade Balance	4.39	4.61	1.80	-2.15	1.39	2.06
Percentage change from previous year						
GDP Deflator	19.23	20.87	16.16	12.03	13.93	12.24
CPI	27.3	18.7	12.7	12.2	8.9	8.2
Percentage change from previous year						
Broad Money (M2)	29.78	42.26	32.24	24.36	17.94	6.75
Percent						
Short-Term Interest Rate	7.93	5.79	5.54	6.5	6.42	6.1
In millions						
Population	13.17	13.39	13.60	13.81	14.03	14.24
As percentage of labor force						
Unemployment Rate	7.9	8.2	6.7	6.6	7.8	7.3

Data taken from IMF sources; International Financial Statistics and World Economic Outlook.

Chile

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	7.0	6.8	6.7	n/a	n/a	7.0	n/a	n/a	n/a	n/a	5.5
Real Exports	9.0	n./a	11.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Real Imports	12.0	n/a	10.3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CPI	6.5	7.1	6.5	n/a	n/a	6.8	n/a	n/a	n/a	n/a	6.0

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

People's Republic of China

GDP. Real GDP growth slowed to about 10 percent in 1995, and is expected to be slightly lower at 9.5 percent in 1996. The official target range remains 8 to 9 percent growth.

Inflation. Inflation has fallen with real growth. Consumer price inflation declined from 24 percent in 1994 to 17 percent, and retail price inflation fell from 21.7 percent to 14.8 percent, following earlier credit tightening by the People's Bank of China. Consumer price inflation is expected to slow still more to 9.7 percent in 1996. The bank hopes to bring inflation to 2-3 percentage points below the GDP growth rate.

Labor Market Conditions. Urban employment in 1994 and 1995 was relatively weak. Officially, urban unemployment was 2.9 percent by the end of 1995, but there is a lot of disguised unemployment, with estimates of 15-20 percent of employment in state-owned enterprises (SOEs) being disguised unemployment. China has undertaken some labor reforms, including a regulatory panel decision allowing SOEs more independence in hiring and firing employees.

Current Account and Exchange Rate. The current account moved back into surplus in 1994 and 1995 because of a depreciation which expanded the trade surplus from $5.4 billion in 1994 to $16.7 billion in 1995.

Fiscal Policy. The government has been running a small fiscal deficit, primarily because of continuing tax concessions and exemptions. About two-fifths of the state operated enterprises post negative profits, and their debt accounted for 14 percent of GDP in 1995.

Monetary Policy. Monetary policy was relatively restrained in 1994-1995 as part of an effort to restrain the overheating economy in 1993. The institutional support for this policy came from the People's Bank of China, whose role in setting monetary policy was strengthened. M1 growth slowed from 27 percent by end-1994 to 17 percent by end-1995.

People's Republic of China

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	387.72	406.14	483.02	601.09	640.94	691.36
Percentage change from previous year						
Real GDP	3.80	9.20	14.20	13.50	12.60	10.20
Private Consumption	6.92	13.20	20.78	25.86	35.37	24.08
Private Investment	n/a	n/a	n/a	n/a	n/a	n/a
Government Consumption	n/a	n/a	n/a	n/a	n/a	n/a
Government Investment	n/a	n/a	n/a	n/a	n/a	n/a
Exports	18.18	15.70	18.23	8.01	31.91	22.94
Imports	-9.79	19.57	26.34	29.00	11.21	14.25
Percentage of GDP						
Budget Balance	-0.53	0.06	-0.02	0.59	-1.23	-1.08
Current Account Balance	3.09	3.27	1.33	-1.98	1.42	n/a
FOB Trade Balance	2.79	2.90	1.07	-1.97	1.37	2.74
Percentage change from previous year						
GDP Deflator	5.68	6.73	7.90	14.55	19.55	12.37
CPI	3.10	3.40	6.40	14.70	24.10	17.10
Percentage change from previous year						
Broad Money (M2)	28.90	26.70	30.80	23.60	34.50	29.50
Percent						
Short-Term interest rate	9.63	9.00	8.37	9.54	9.99	11.10
In millions						
Population	1143.33	1158.23	1171.71	1185.17	1198.50	1211.21
As percentage of labor force						
Unemployment Rate	2.50	2.30	2.30	2.60	2.80	2.90

People's Republic of China

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	consensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	9.5	9.7	9.0	8.0	n/a	9.6	8.5*	n/a	n/a	n/a	9.7
Real Exports	6.3	n/a	-5.0	11.0	n/a	n/a	6.1*	n/a	n/a	n/a	n/a
Real Imports	15.7	n/a	6.0	24.0	n/a	n/a	8.6*	n/a	n/a	n/a	n/a
CPI	11.0	8.7	12.6	10.0	n/a	11.1	7.0*	n/a	n/a	n/a	11.4

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996
*Data refer to 1997-1999, not 1996-1999

Hong Kong

GDP. Hong Kong's real GDP grew by 4.7 percent in 1995, led mainly by a generally strong export performance, and by intensive infrastructure construction and substantial investment in machinery and equipment. Consumer demand was, however, weak. Overall GDP growth is forecast to grow by 4.7 percent in 1996, at par with the growth rate attained last year. Consumer demand has bottomed out and is expected to revive further. Investment demand should maintain a strong growth momentum, propelled by continued heavy investment in infrastructure projects and recovery in private sector building activity. Exports of services should remain robust, while exports of goods are envisaged to pick up from the weak performance earlier in the year along with improved import demand from US and China.

Inflation. Inflation in terms of the CPI(A) averaged 8.7 percent in 1995. With locally-generated inflationary pressure receding and with imported inflation contained by a relatively firm US dollar and slower inflation in China, consumer price inflation is expected to ease to 6.8 percent in 1996. The actual outcome in the first seven months of 1996 was 6.3 percent.

Labor Market Conditions. Labor market conditions eased in 1995, but showed continued improvements since early 1996. The seasonally adjusted unemployment rate, after peaking at 3.6 percent in the three months ending November 1995, edged down to 3.2 percent in the first quarter of 1996 and further to 3.1 percent in the second quarter. It stood at 2.8 percent in the three months ending August 1996. Total employment continued to maintain a solid growth, whilst most recently the growth in labor supply has come down to a level close to the growth in total employment.

Current Account & Exchange Rate. In 1995, the combined visible and invisible trade account showed a deficit of HK$27 billion, equivalent to 2.5 percent of GDP. This was largely caused by a surge in import requirements for production, infrastructure construction, and capacity expansion, and by a deterioration in the terms of trade earlier in the year. For 1996, continued rapid growth in tourism and in offshore trading activities, coupled with an envisaged slow-down in import growth and improvement in the terms of trade, should help to improve the overall trade balance.

Fiscal Policy. In line with the stepping-up of investment on the new airport projects, the Government had a small fiscal deficit of around HK$2.5 billion in the financial year 1995/96, which represented only 0.2 percent of GDP. For the financial year 1996/97, a small fiscal surplus is budgeted.

Monetary Policy. The prime objective of Hong Kong's monetary policy continues to be maintaining stability in the external value of the Hong Kong dollar against the U.S. dollar, at the fixed rate of HK$7.8 to US$1.

Hong Kong

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	74.8	86.0	100.7	116.0	131.0	142.9
Percentage change from previous year						
Real GDP	3.4	5.1	6.3	6.1	5.3	4.7
Private Consumption	5.7	8.6	8.5	7.5	6.4	0.7
Private Investment	10.2	9.5	12.3	-4.3	26.2	18.9
Government Consumption	5.5	7.7	7.2	2.2	3.7	4.9
Government Investment	5.0	-3.2	5.2	39.3	16.5	15.8
Exports	8.4	15.0	18.3	12.7	9.8	11.9
Imports	11.5	18.1	20.8	12.0	13.4	13.0
Percentage of GDP						
Budget Balance	0.7	3.4	2.8	2.1	1.1	-0.2
Current Account Balance*	8.5	6.6	5.3	7.0	1.6	-2.5
FOB Trade Balance	-0.9	-2.4	-4.3	*-3.3*	-8.3	-13.7
Percentage change from previous year						
GDP Deflator	7.5	9.2	9.7	8.5	7.2	4.3
CPI	9.8	12.0	9.4	8.5	8.1	8.7
Percentage change from previous year						
Broad Money	15.5	17.9	14.3	26.9	18.7	15.1
Percent						
Short-Term Interest Rate	8.66	6.21	3.89	3.39	4.76	6.17
In millions						
Population	5.7	5.8	5.8	5.9	6.1	6.2
As percentage of labor force						
Unemployment Rate	1.4	1.8	2.1	2.0	2.0	3.5

Data in regular font taken from IMF sources; International Financial Statistics and World Economic Outlook.
* Combined balance on visible and invisible trade.

Hong Kong

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	4.7	5.0	4.8	4.5	n/a	4.5	5.0	n/a	n/a	n/a	5.1
Real Exports	7.0		10.0	15.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Real Imports	5.7		8.0	14.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CPI	6.8	7.5	7.5	7.5	n/a	7.2	n/a	n/a	n/a	n/a	7.7

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996
*Data refer to 1997, not 1996-1999

Indonesia

GDP. In 1995, the economy expanded by a robust 8.1 percent, above the government's 7.1 percent benchmark. This growth was driven largely by investment, which is about 33 percent of GDP. The government plans to spur growth by continuing to deregulate the economy.

Inflation. Inflation has averaged nearly 9 percent in the 1990s. Although inflationary pressures may moderate, overheating remains a primary policy concern. The National Logistics Agency, which is responsible for keeping stable prices for basic food items, has increased its stockpile of rice in order to prevent a repeat of 1995, when a low stockpile contributed to a rise in prices.

Labor Market Conditions. In 1995, the unemployment rate reached 5.1 percent. During prior years, the labor force and employment have both grown by about 2 percent, allowing the unemployment rate to remain roughly constant.

Current Account and Exchange Rate. The sharp increase in Indonesia's current account deficit in 1995 is one of the clearest indicators that the economy started overheating. Although Indonesia's current account deficit is lower as a percentage of GDP than those of some of its neighbors, it remains a concern given Indonesia's high level of foreign debt. Export growth should continue in 1996, aided by Japan's economic recovery, continued depreciation of the rupee, and expansion of the nation's export base.

Fiscal Policy. Fiscal policy is constrained by high levels of external debt, the possibility that official foreign assistance will level off, and the prospect of a declining share of oil and gas revenue in GDP. The central government ran a deficit in 1995 of 0.5 percent of GDP, and the general government deficit remained about 3 percent of GDP.

Monetary Policy. During 1995, the growth of monetary aggregates remained relatively high (M2 growth over a twelve month period ending in December was 27.6 percent). For this reason, the central bank increased the statutory reserve requirement from 2 to 3 percent in December 1995, and a further increase from 3 to 5 percent to be effective in April 1997. Concern with the nation's potential overheating has led the central bank to control sources of money supply expansion, particularly bank credit. Efforts to manage credit expansion included supervising banks and financial institutions more closely and extending moral suasion to urge banks to slow down credit expansion. The current target of money supply (M2) growth is unlikely to be met, and analysts continue to expect a tight monetary policy in the coming year.

Indonesia

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	114.4	128.2	139.1	158.0	175.5	199.9
Percentage change from previous year						
Real GDP	9.6	8.9	7.2	7.3	7.5	8.1
Private Consumption	10.5	8.0	3.5	6.5	5.8	6.3
Private Investment	12.2	6.3	5.2	6.9	16.1	14.1
Government Consumption	3.2	7.0	5.8	0.1	2.3	3.4
Government Investment	26.5	9.0	5.4	2.9	4.7	7.4
Exports	0.5	19.9	14.7	6.6	9.0	4.3
Imports	23.1	16.8	6.6	4.4	14.5	24.6
Percentage of GDP						
Budget Balance	0.41	0.47	-0.49	0.85	n/a	0.5
Current Account Balance	-2.8	-3.4	-2.2	-1.5	-1.7	-3.6
FOB Trade Balance	3.3	2.6	4.8	5.4	4.6	2.8
Percentage change from previous year						
GDP Deflator	3.7	8.8	5.4	8.9	7.0	0.7
CPI	9.5	9.5	4.9	9.8	9.2	8.6
Percentage change from previous year						
Broad Money	44.2	17.0	20.2	22.0	20.2	27.6
Percent						
Short-Term Interest Rate	20.99	21.89	16.72	11.79	14.27	17.15
In millions						
Population	179.35	182.94	186.04	189.14	192.22	195.28
As percentage of labor force						
Unemployment Rate	2.6	2.5	2.7	3.1	4.4	5.1

Indonesia

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK +	con-sensus[o]	official	PECC	ADB	LINK +	con-sensus[o]
Real GDP	7.5	7.8	7.6	7.8	n/a	n/a	7.5	n/a	n/a	n/a	n/a
Real Exports	8.3		13.6	14.5	n/a	n/a	9.9	n/a	n/a	n/a	n/a
Real Imports	13.3.		6.7	14.8	n/a	n/a	13.9	n/a	n/a	n/a	n/a
CPI	7.69.1	9.1	10.0	7.5	n/a	n/a	7.0	n/a	n/a	n/a	n/a

[o] Blue Chip Private Sector Consensus forecast; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996
*Data refer to 1997, not 1996-1999

Japan

GDP. Real GDP growth in FY 1995 (April 1995 - March 1996) was 2.2 percent. The economy is expected to move into an autonomous recovery, with private-sector demand progressively accelerating in FY 1996 through implementation of appropriate fiscal and monetary policy and economic and structural reform. The real GDP growth of the first half of FY 1996 is 6.4percent on the annualized basis. In FY 1996, economic growth is expected to reach 2.5 percent.

Inflation. Inflation was nonexistent in 1995, and is expected to remain extremely low through 1996. Wholesale prices in August 1996 rose by a marginal 0.5 percent relative to a year earlier.

Labor Market Conditions. The unemployment rate improved to 3.4 percent in July from an unprecedented high of 3.5 percent in May and June 1996. The effective job offers-to-application ratio increased to 72 percent in July. Although the employment situation will continue to be severe, it is expected to improve modestly as the economy continues to recover.

Current Account and Exchange Rate. The current account surplus fell in the first half of 1996 is 3.3 trillion yen (provisional and seasonally adjusted). Steady growth of imports and the on-going transfer of production capacity overseas are expected to continue in 1996, resulting in further decline of the current account surplus.

Fiscal Policy. Attempts by the government to revive the economy have resulted in a significant budget deficit of the central government -- equivalent to 4.5 percent of GDP in FY 1995. With initial budget plans for FY 1996 pushing spending up 5.8 percent while revenues declines, the central government is heading towards another budget deficit of over 4 percent of GDP in 1996. At this rate, the issuance of deficit-financing bonds is slated to reach an unprecedented high of 12 trillion yen in fiscal 1996.

Monetary Policy. The Bank of Japan lowered the official discount rate from 1.0 percent to 0.5 percent in September 1995.

Financial System. A bill concerning special packages for promoting disposal of claims and debts of the specified Jusen companies was given the Diet’s final approval on June 18.

Japan

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	2996.2	3419.0	3731.5	4293.3	4698.5	5119.4
Percentage change from previous year						
Real GDP	5.1	4.0	1.1	0.1	0.5	0.9
Private Consumption	4.4	2.5	2.1	1.2	1.8	1.7
Private Investment	9.4	2.9	-5.8	-7.6	-2.5	0.8
Government Consumption	1.5	2.0	2.0	2.4	2.2	2.0
Government Investment	4.9	4.9	14.5	15.7	2.8	1.3
Exports	6.9	5.4	4.9	1.3	4.6	5.0
Imports	7.9	-4.7	-1.1	1.7	9.0	13.5
Percentage of GDP						
Budget Balance	0.0	-0.3	-3.3	-4.5	-5.5	-4.5
Current Account Balance	1.5	2.0	3.0	3.1	2.8	2.2
FOB Trade Balance	2.3	2.8	3.3	3.3	3.1	2.6
Percentage change from previous year						
GDP Deflator	2.3	2.7	1.7	0.6	0.3	0.5
CPI	3.1	3.3	1.6	1.3	0.7	-0.1
Percentage change from previous year						
Broad Money (M2+CD)	11.7	3.6	0.6	1.1	2.1	3.2
Percent						
Short-Term interest rate	7.7	7.3	4.4	2.9	2.2	1.2
In millions						
Population	123.6	124.0	124.5	124.8	125.0	125.6
As percentage of labor force						
Unemployment Rate	2.1	2.1	2.2	2.5	2.9	3.2

Japan

Percentage change from previous year											
	1996						1996-1999				
	official***	IMF	PECC	ADB	LINK+	con-sensus°	official***	PECC	ADB	LINK+	con-sensus°
Real GDP	2.5	3.5	2.4	n/a	2.0	3.6	3 *	n/a	n/a	2.6**	1.8
Real Exports	5.6	n/a	5.7	n/a	2.5	n/a	n/a	n/a	n/a	3.9**	n/a
Real Imports	8.2	n/a	14.5	n/a	6.2	n/a	n/a	n/a	n/a	1.2**	n/a
CPI	0.5	0.2	0.5	n/a	n/a	0.2	0.75*	n/a	n/a	n/a	1.3

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available

+ Project Link World Outlook, May 3, 1996

* IMF Japan immediately and actively implement the structural reforms included in "Social and Economic Plan for Structural Reforms Towards a Vital Economy and Secure LIMFe." (Dec. 1995). Data refer to FY 1996-2000, not 1996-1999

**Data refers to 1997, not 1996-1999

***All figures of official forecasts are on fiscal year basis.

Republic of Korea

GDP. Korea's GDP grew at an unexpectedly high rate of 9.0 percent in 1995. The primary causes of this growth were increased fixed capital formation (which was up 12.4 percent), and rapid growth in exports (up 24.1 percent). Growth is expected to slow to about 7.2 percent in 1996.

Inflation. Inflation moderated in 1995, although continued high real growth could increase inflationary pressure in 1996. Utility prices -- which are now below costs -- are expected to rise, but import prices have been falling slightly. Inflation will probably increase slightly to 4.6 percent in 1996.

Labor Market Conditions. Unemployment fell in 1995 to 2 percent. In 1995, the labor force grew 2.3 percent while employment grew 2.7 percent. Employment growth was greatest in construction (6.7 percent), and services and public utilities (5.2 percent), while employment growth in manufacturing was modest (1.7 percent), and in agriculture and fisheries was negative (-6.0 percent).

Current Account and Exchange Rate. As a result of a large merchandise trade deficit, Korea's current account deficit grew to about 2 percent of GDP in 1995. The current account deficit is likely to expand in 1996. The Korean won appreciated in nominal terms against the US dollar during 1995, but a nominal depreciation since the beginning of 1996 brought the dollar value of won lower than the levels seen in early 1995.

Fiscal Policy. Korea ran a budget surplus in 1993 and 1994. Despite an increasing range of responsibilities, the size of the government has remained relatively small. General government expenditures and net lending accounted for 25.7 percent of GDP in 1994. Korea plans to finance increased social infrastructure spending with increased tax revenue by broadening the tax base through reform.

Monetary Policy. Korea's monetary authorities target a range of M2 growth. The authorities have progressively lowered the midpoint of this range in order to bring inflation down to partner-economy levels, but at the same time increased flexibility by widening the target bands.

Republic of Korea

	1990	1991	1992	1993	1994	1995
In billions of US dollars						
Nominal GDP	253.6	294.1	307.9	332.8	380.7	455.6
Percentage change from previous year						
Real GDP	9.5	9.1	5.1	5.8	8.6	9.0
Private Consumption	10.7	9.5	6.6	5.7	7.6	7.9
Private Investment	27.7	11.4	-2.5	6.2	12.3	n/a
Government Consumption	7.2	8.5	7.6	3.0	4.2	2.8
Government Investment	13.6	22.2	11.0	-0.6	8.2	n/a
Exports	4.2	11.8	11.0	11.3	16.5	24.1
Imports	14.3	19.2	5.1	6.7	21.7	22.1
Percentage of GDP						
Budget Balance	0.6	-0.8	-0.2	1.8	2.4	-0.3
Current Account Balance	-0.86	-2.97	-1.47	0.12	-1.19	-1.94
FOB Trade Balance	-0.79	-2.37	-0.70	0.56	-0.83	-1.04
Percentage change from previous year						
GDP Deflator	9.9	10.1	6.1	5.1	5.5	5.4
CPI	8.6	9.3	6.2	4.8	6.2	4.5
Percentage change from previous year						
Broad Money (M2)	21.2	18.6	18.4	18.6	15.6	15.5
Percent						
Short-Term interest rate	18.12	18.32	16.41	12.96	13.29	14.05
In millions						
Population	42.87	43.27	43.66	44.06	44.45	44.85
As percentage of labor force						
Unemployment Rate	2.4	2.3	2.4	2.8	2.4	2.0

Republic of Korea

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK +	con-sensus[o]	official	PECC	ADB	LINK +	con-sensus[o]
Real GDP	7.2	7.2	7.5	7.5	n/a	n/a	7.2	n/a	n/a	n/a	n/a
Real Exports	13.6		12.1	14.3	n/a	n/a	10.2	n/a	n/a	n/a	n/a
Real Imports	10.9		10.7	11.8	n/a	n/a	9.5	n/a	n/a	n/a	n/a
CPI	4.6	5.2	4.0	4.3	n/a	n/a	3.8	n/a	n/a	n/a	n/a

[o] Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

Malaysia

GDP. Real GDP grew by 9.2 percent in 1994 and 9.5 percent in 1995. The expansion was driven by strong domestic demand and exports. Infrastructure investment was particularly high, growing by 38 percent in 1994, mostly as a result of increased public investment. There are concerns that the continuation of these high growth rates could result in overheating.

Inflation. The Consumer Price Index (CPI) continued to remain relatively stable at 3.4 percent in 1995 (1994: 3.7 percent) despite increasing price pressures arising from higher aggregate demand, labor shortages with their attendant wage pressure, and the economy operating at almost full capacity. This achievement in stabilizing the domestic price level is remarkable, particularly against the backdrop of economic development that could have easily fueled price pressures. With intensified efforts to contain inflationary pressures, the rate of inflation is expected to remain below 4 percent in 1996.

Labor Market Conditions. The current investment boom has helped fuel a very tight labor market. Rapid real GDP growth and strong employment growth have driven the unemployment rate below 3 percent. The result is wage growth above 10 percent for nearly every sector of the economy -- substantially higher than labor productivity growth. In 1996, the labor market situation is expected to remain tight, with the unemployment rate declining further to 2.6 percent from 2.8 percent in 1995.

Current Account & Exchange Rate. The current account deficit has widened because of the infrastructure fueled growth in imports. Import levels are expected to rise still further due to the launching of large infrastructure projects which require imported building and construction materials. The ringgit remained stable against the U.S. dollar in 1995 and, on a trade-weighted basis, appreciated against a composite of currencies of Malaysia's major trading partners during the first seven months of 1996.

Fiscal Policy. For 1995, Malaysia originally forecast a budget surplus equivalent to 0.3 percent of GNP but the actual outcome was in surplus equivalent to 0.9 percent of GNP. The 1996 budget is projected to result in a surplus of 0.7 percent of GNP. It includes measures to dampen inflation, but on the whole is mildly expansionary with government financing for infrastructure projects moving forward.

Monetary Policy. Bank Negara Malaysia has continued to maintain tight monetary policy in 1995 and 1996 in order to contain excess aggregate demand as well as to promote savings. In line with this, the statutory reserve ratio has been progressively raised from 11.5 percent in 1995 to 13.5 percent in June 1996 to mop up excess liquidity. The consequent rising interest rates have kept inflationary pressures in check, supported the ringgit, and attracted short-term funds to finance the nation's large current account deficit.

Malaysia

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	42.3	47.4	56.2	54.9	72.6	85.5
Percentage change from previous year						
Real GDP	9.7	8.6	7.8	8.3	9.2	9.5
Private Consumption	13.1	9.5	4.4	5.3	7.0	12.9
Private Investment	24.8	27.7	6.6	9.6	27.0	16.0
Government Consumption	5.3	12.4	4.0	10.7	9.9	10.6
Government Investment	17.1	9.2	11.2	18.0	10.6	25.5
Exports	17.4	18.6	9.7	17.0	27.0	20.2
Imports	30.0	27.4	0.6	15.7	32.8	24.6
Percentage of GDP						
Budget Balance	-3.0	-2.0	-0.9	0.23	2.4	1.0
Current Account Balance	-2.1	-9.0	-3.8	-4.9	-6.7	-8.3
FOB Trade Balance	0.5	-4.9	1.5	2.4	-1.1	-4.3
Percentage change from previous year						
GDP Deflator		2.9	5.2	1.77	5.16	5.1
CPI	3.1	4.4	4.7	3.6	3.7	3.4
Percentage change from previous year						
Broad Money	12.8	14.5	19.1	22.1	14.7	24.0
Percent						
Short-Term Interest Rate	7.23	7.70	7.10	5.24	4.51	5.85
In millions						
Population	17.8	18.2	18.6	19.0	19.6	20.1
As percentage of labor force						
Unemployment Rate	5.1	4.3	3.7	3.0	2.9	2.8

Malaysia

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	8.3	7.7	8.5	8.5	n/a	8.4	8.0	n/a	n/a	n/a	8.1
Real Exports	13.7		21.0	18.5	n/a	n/a	14.2	n/a	n/a	n/a	n/a
Real Imports	12.7		18.5	18.0	n/a	n/a	9.5	n/a	n/a	n/a	n/a
CPI	3.6	2.9	3.3	3.7	n/a	3.7	<4	n/a	n/a	n/a	3.6

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

Mexico

GDP. Mexico's real GDP fell by 6.2 percent in 1995, the worst performance since 1932. Some of the main causes of this contraction were the cessation -- and in some cases, the reversal -- of capital inflows along with the implementation of a strong economic adjustment program in the wake of the December 1994 liquidity crisis. Both investment and consumption fell, and exports of goods and services was the only GDP component that increased in 1995. Given an improved debt-amortization scenario, a moderate recovery of investment and consumption, and continued strong performance in the export sector, Mexico is expected to achieve 3 percent growth during 1996. On a year-over-year basis, real GDP growth during the first quarter of 1996 was a negative 1.0 percent, while the figure for the second quarter was a positive 7.2 percent, the first positive quarterly GDP growth figure since the end of 1994.

Inflation. The year-over-year inflation rate during 1995 was 51.97 percent. However, tight fiscal and monetary policies helped stem inflation, which has shown a downward trend since January of 1996. For 1996, monetary authorities have been guided by a year-over-year (December) inflation target of 20.5 percent. The consensus of private forecasters projects an inflation rate of around 27 percent for 1996 and substantially lower figures for 1997.

Labor Market Conditions. Unemployment rose in 1995 as a result of declining output, but started to show a downward trend at year-end. Unemployment levels increased from 5.2 percent in the first quarter to 7.4 percent in the second quarter of 1995, but decreased to 6.1 percent in the fourth quarter. After reaching a low of 5.4 percent in May 1996, unemployment figures increased slightly during June and July, but decreased in August to 5.3 percent.

Current Account and Exchange Rate. Mexico's current account deficit fell from almost 8 percent of GDP in 1994 to 0.3 percent of GDP in 1995, as the trade balance moved from a deficit of 4.9 percent of GDP (- $US 18.5 billion) to a surplus of 2.8 percent of GDP ($US 7.1 billion). During 1995 exports increased 30.6 percent in US dollar terms, while imports decreased only 8.7 percent. Both exports and imports are expected to increase around 19 percent in U.S. dollar terms during 1996, and it is projected that the current account deficit will remain at 0.3 percent of GDP. During the first half of 1996, the current account registered a surplus of US$ 523 million. Regarding the exchange rate, following the sharp nominal and real depreciations at the end of 1994 and during 1995, the peso achieved considerable stability during the first half of 1996, and although it appreciated slightly, its value remains well below pre-crisis levels in real terms.

Fiscal Policy. The government is aiming for a primary surplus of 4 percent of GDP and overall public sector balance in 1996, after achieving a primary surplus of 5.6 percent of GDP and a small public sector surplus of 0.05 percent of GDP in 1995. Total revenues are expected to fall from 26.6 percent of GDP in 1995 to 24.5 percent of GDP in 1996, with a corresponding fall in expenditures.

Monetary Policy. The strict monetary policy followed by the Bank of Mexico during 1995, which led to a nominal increase of only 17 percent in the monetary base (given an increase of 36percent in the GDP deflator), helped control inflationary pressures and contributed to a more stable macroeconomic environment. The Bank of Mexico's monetary program for 1996 sets the limit on the expansion of net domestic credit at 15 billion pesos (approximately US$ 2 billion). It has set an inflation target of 20.5 percent for 1996 and anticipates a 27 percent increase of the monetary base in nominal terms by year-end.

Mexico**

	1990	1991	1992	1993	1994	1995
In billions of US dollars						
Nominal GDP	241.12	286.87	329.35	361.96	377.11	249.94
Percentage change from previous year						
Real GDP	4.44	3.63	2.80	0.60	4.46	-6.20
Private Consumption	6.08	4.89	3.91	0.20	4.64	-6.91
Private Investment	13.27	13.03	15.82	-0.59	9.79	-32.02
Government Consumption	2.32	3.93	2.31	2.03	2.85	-6.40
Government Investment	12.74	-4.40	-4.96	-3.76	2.90	-16.96
Exports	3.64	4.59	1.68	3.74	17.44	36.44
Imports	19.75	16.78	20.86	-1.25	20.54	-12.06
Percentage of GDP						
Budget Balance	-2.81	-0.55	1.61	0.73	-0.14	0.05
Current Account Balance	-3.00	-5.10	-7.40	-6.50	-7.80	-0.30
FOB Trade Balance	-0.40	-2.50	-4.80	-3.70	-4.90	2.80
Percentage change from previous year						
GDP Deflator	29.50	21.60	14.60	10.00	8.47	34.28
CPI	29.93	18.79	11.94	8.01	7.05	51.97
Percentage change from previous year						
Broad Money (M3)	41.2	23.3	17.9	22.6	26.3	19.2
Percent						
Short-Term interest rate	35.03	19.82	15.89	15.50	14.68	48.24
In millions						
Population	83.488	85.134	86.774	88.401	90.011	91.606
As percentage of labor force						
Unemployment Rate	2.74	2.69	2.78	3.43	3.64	6.27

** GDP figures, and the components of GDP -- consumer expenditure, private investment, public investment, government consumption, exports and imports of goods and services -- from 1990 to 1993 use '1980' as a base year; figures for 1994 and 1995 use '1993 as a base year.

Mexico

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK +	con-sensus[o]	official	PECC	ADB	LINK +	con-sensus[o]
Real GDP	3.0	3.6	2.5	n/a	n/a	3.8	n/a	3.0	n/a	n/a	4.2
Real Exports	13.73	12.0	13.7	n/a	n/a	n/a	n/a	12.8	n/a	n/a	n/a
Real Imports	11.94	10.0	11.9	n/a	n/a	n/a	n/a	13.4	n/a	n/a	n/a
CPI	20.5	34.1	29.0	n/a	n/a	26.9	n/a	22.7	n/a	n/a	18.1

[o] Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

New Zealand

GDP. New Zealand continued its expansion in 1995, posting 3.4 percent real growth. The transport, communication, and manufacturing sectors made the largest contribution to growth. Strong growth in domestic activity was partly offset through strong growth in imports.

Inflation. Inflation, which had held below 2 percent between 1992-1994, accelerated to 3.8 percent in 1995, driven primarily by increased mortgage interest rates. The longer-term outlook is for inflation to fall below 2 percent, but inflation in housing construction and house prices worries the Reserve Bank. Monetary conditions remain firm.

Labor Market Conditions. Unemployment declined from 8.2 percent in 1994 to 6.3 percent in 1995. The sectors that experienced the most employment growth were trade and distribution, business and financial services, and community, social and personal services. Average hourly earnings were up 2.4 percent in 1995, reflecting the tightening labor market.

Current Account and Exchange Rate. After falling in 1991 and again in 1993, New Zealand's current account deficit has been 3 to 4.5 percent of GDP over the past two years. The larger deficit resulted from higher imports and international investment-income deficits that dominated gains from growth in exports of goods and services.. The New Zealand dollar continued its strong appreciation in 1995, gaining against nearly all major currencies.

Fiscal Policy. New Zealand's successful fiscal consolidation has resulted in a budget surplus for 1994 and 1995. Strong revenue growth and limited growth in expenditure contributed to 1995's surplus, and this trend is expected to continue into 1996. Tax reduction and new spending, announced in the Tax Reduction and Social Policy Package, has seen the projected surplus fall to NZ$2.9 billion in FY 96-97 but grow to NZ$3.4 billion in FY 97-98. New Zealand's new fiscal accounting framework is widely seen as defining best practice for budget data.

Monetary Policy. Anticipating rising inflationary pressures, the Reserve Bank began preemptive tightening at the end of 1994, which has continued throughout 1995 and is expected to continue throughout 1996. Given stronger than expected price pressure, especially in the property sector, and uncertainty surrounding the response to fiscal stimulus, the Reserve Bank has judged that there is little room for a monetary easing.

New Zealand

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	43.2	41.3	39.4	42.8	49.9	57.2
Percentage change from previous year						
Real GDP	-0.2	-1.79	1.0	4.95	5.82	3.41
Private Consumption	-0.2	-1.9	0.1	2.3	4.2	2.3
Private Investment	-2.3	-18.0	7.3	20.4	16.8	11.0
Government Consumption	4.9	-2.0	2.8	-0.2	-0.9	2.0
Government Investment	8.4	-22.9	-16.7	-13.4	7.2	11.1
Exports	4.8	9.6	2.4	6.1	10.3	2.6
Imports	2.3	-5.1	8.0	5.9	12.9	8.5
Percentage of GDP						
Budget Balance	-1.3	-3.5	-7.0	-1.1	0.9	3.1
Current Account Balance	-2.8	-2.2	-2.7	-1.2	-3.0	-4.4
FOB Trade Balance	2.1	5.0	4.1	4.1	2.8	1.6
Percentage change from previous year						
GDP Deflator	3.1	1.2	1.8	2.6	1.3	*2.2*
CPI	6.1	2.6	1.0	1.3	1.8	3.8
Percentage change from previous year						
Broad Money*	6.2	9.3	10.5	7.0	5.1	9.1
Percent						
Short-Term Interest Rate	13.89	9.97	6.73	6.33	6.73	9.01
In millions						
Population	3.36	3.41	3.45	3.49	3.53	3.59
As percentage of labor force						
Unemployment Rate	7.8	10.3	10.3	9.5	8.2	6.3

Data is taken from New Zealand statistics, New Zealand Treasury and the Reserve Bank of New Zealand.
*Data refer to M3

New Zealand

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	2.2	2.3	2.6	n/a	n/a	1.8	3.1	n/a	n/a	n/a	2.9
Real Exports	3.1	n/a	3.4	n/a	n/a	n/a	4.7	n/a	n/a	n/a	n/a
Real Imports	8.5	6.5	6.9	n/a	n/a	n/a	3.7	n/a	n/a	n/a	n/a
CPI	2.6	2.4	1.4	n/a	n/a	2.3	1.1	n/a	n/a	n/a	1.4

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

Papua New Guinea

GDP. Papua New Guinea's economy fell in 1995 by 4.25 percent, but is expected to rebound, growing 0.5 percent in 1996. The contraction of GDP was heavily influenced by the sharp reduction in production from the Porgera gold mine and the Kutubu oil field. The rebound of GDP in 1996 will be aided by the construction of the Lihir gold mine and the Gobe oil field.

Inflation. Inflation for 1995 accelerated to 17.5 percent, after having been at 2.9 percent in 1994. This sharp increase in inflation was influenced by the depreciation of the kina over the course of 1994 and 1995. However, tight monetary and wage policies, as well as a seasonal pickup in exports, should reduce inflationary pressures. Inflation is expected to fall to 5 percent for 1996.

Labor Market Conditions. Employment growth was strong in most sectors of the economy in 1995, and official employment has recently recovered to the level of 1989. Employment growth was concentrated in the agricultural sector during the first half of the year, but the mining and construction sectors played a more prominent role during the second half.

Current Account and Exchange Rate. The balance of payments on current account was less favorable in 1995, as the current account surplus slipped to 7 percent of GDP. The increase in net exports is expected to be restrained in 1995 due to declining mining revenues, and rising import payments for increased mining investment. The kina depreciated over 1995, but leveled off towards the end of the year.

Fiscal Policy. The budget surplus amounted to 0.1 percent of GDP in 1995. Total expenditure was reduced to 26 percent of GDP, and revenues improved from new measures introduced in late 1994. The creation of the fiscal surplus should bring macroeconomic stability and enable the beginning of structural reforms to sustain growth.

Monetary Policy. Monetary policy was tightened in late 1994 and through 1995 to reduce inflationary pressures. This led to sharp increases in nominal interest rates. In 1996, money supply growth is projected to be lower than in 1995 and the rate of inflation is expected to fall to around 5 percent.

Papua New Guinea

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	3.2	n/a	n/a	n/a	n/a	n/a
Percentage change from previous year						
Real GDP	-3.00	9.53	11.81	14.44	n/a	-4.25
Private Consumption	n/a	n/a	n/a	n/a	n/a	n/a
Private Investment	n/a	n/a	n/a	n/a	n/a	n/a
Government Consumption	n/a	n/a	n/a	n/a	n/a	n/a
Government Investment	n/a	n/a	n/a	n/a	n/a	n/a
Exports	0.97	21.92	22.70	29.36	n/a	n/a
Imports	-6.29	24.90	8.45	-3.33	n/a	n/a
Percentage of GDP						
Budget Balance	-3.47	-2.02	-5.85	-6.58	n/a	0.1
Current Account Balance	-2.35	-4.42	2.44	14.66	n/a	7.0
FOB Trade Balance	2.15	2.21	16.00	33.35	n/a	n/a
Percentage change from previous year						
GDP Deflator	4.10	7.03	2.68	5.09	n/a	n/a
CPI	6.95	7.00	4.30	4.93	2.90	17.5
Percentage change from previous year						
Broad Money	-0.19	21.32	4.86	35.86	3.40	n/a
Percent						
Short-Term Interest Rate	11.4	10.33	8.88	6.25	6.85	n/a
In millions						
Population	3.70	3.77	3.85	3.92	n/a	n/a
As percentage of labor force						
Unemployment Rate	n/a	n/a	n/a	n/a	n/a	n/a

Data taken from IMF sources; International Financial Statistics and World Economic Outlook.

Papua New Guinea

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	1.5	0.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Real Exports	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Real Imports	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CPI	5.0	9.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

Philippines

GDP. Supported by strong export growth and an inflow of foreign investment, real GDP growth surged to 4.8 percent in 1995. Higher personal incomes are expected to support the expansion of private consumption and capital investment, raising growth to roughly 6 percent in 1996. Continuing reform efforts have reduced barriers to foreign investment, cut tariffs, reformed the tax system, and privatized state-owned enterprises.

Inflation. Rice shortages caused by severe drought and distribution problems contributed to an inflation rate of 8.1 percent for 1995. The increase in the price of rice alone contributed 32.3 percent to inflation. The inflationary pressure from rising oil prices, increasing wage demands, and the expansion of a value-added tax will be moderated by restricted money supply growth from the Central Bank (Bangko Sentral ng Philipinas). The inflation rate is expected to be 8.7 percent for 1996.

Labor Market Conditions. The rice-price-led inflation has resulted in demands for higher nominal wage increases. The high output growth rate in 1995 was accompanied by increased labor productivity. The average unemployment rate remained steady at about 9.5 percent for 1995. For 1996, the unemployment rate is projected to decline to 9.2 - 9.4 percent.

Current Account and Exchange Rate. Export growth, which was strong at 29 percent in 1995, is expected to slowdown in 1996 to 18.4 percent. The steady growth of investment-related imports is expected to keep the current account in deficit, which is projected at 3.0 percent of GNP for 1996.

Fiscal Policy. The government continued to record a budget surplus in 1995 due partly to increased revenue from privatization reform. Recognizing the need to permanently strengthen the tax base, Congress is expected to pass needed tax reform legislation in 1996.

Monetary Policy. Interest rates in general, have been on the downward trend in 1995. With inflation in check, interest rates are expected to further go down for the rest of 1996. This is in line with the government's thrust to promote investment-led growth.

Philippines

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	44.3	45.4	53.0	54.4	64.1	74.1
Percentage change from previous year						
Real GDP	3.0	-0.6	0.3	2.1	4.4	4.8
Private Consumption	5.4	2.3	3.3	3.0	3.7	3.8
Private Investment	15.8	-17.3	7.8	7.9	8.7	3.5
Government Consumption	6.8	-2.1	-0.9	6.2	6.1	3.6
Government Investment	4.7	8.0	11.1	15.8	18.5	29.4
Exports	4.7	8.0	11.1	15.8	18.5	29.4
Imports	17.2	-1.3	20.5	21.2	21.2	23.7
Percentage of GDP						
Budget Balance	-3.5	-2.1	-1.2	-1.5	1.0	0.5
Current Account Balance	-5.8	-1.9	-1.6	-5.6	-4.6	-2.5
FOB Trade Balance	-9.1	-7.1	-8.9	-11.4	-12.3	-12.1
Percentage change from previous year						
GDP Deflator	12.9	16.8	8.0	6.9	10.0	7.2
CPI	14.2	18.7	8.9	7.6	9.0	8.1
Percentage change from previous year						
Broad Money (M3)	18.4	15.5	11.0	24.6	26.5	25.3
Percent						
Short-Term interest rate	23.4	21.5	16.0	12.5	12.7	11.8
In millions						
Population	62.1	63.7*	65.3*	67.0*	68.6*	70.3**
As percentage of labor force						
Unemployment Rate	8.3	10.5	9.8	9.3	9.5	9.5

Data taken from IMF sources; International Financial Statistics and World Economic Outlook.

* Projection based on the 1990 Census of Population and Housing: median assumption, 1990 census count (May 1, 1990) is 60.7 million.

** Actual population count based on the 1995 Mid-Decade Population Census

Philippines

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	5.5	5.0	5.5	5.5	n/a	n/a	6.9*	n/a	n/a	n/a	n/a
Real Exports	16.0		16.0	25.0	n/a	n/a	17.3*	n/a	n/a	n/a	n/a
Real Imports	19.4		14.0	20.0	n/a	n/a	13.4*	n/a	n/a	n/a	n/a
CPI	8.7	7.8	7.0	9.0	n/a	n/a	6.5*	n/a	n/a	n/a	n/a

° Blue Chip Private Sector Consensus forecast; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
*Data refer to 1997, not 1996-1999

Singapore

GDP. High investment, saving, and inward foreign direct investment flows account for rapid overall growth in Singapore. Investment amounts to between 35 and 40 percent of GDP, while saving is an astonishing 50 percent of GDP -- the highest savings rate in the world. Manufacturing output was up 10 percent in 1995. Growth is expected to moderate to 7 to 8 percent due to the downturn in global electronics demand which in turn has been exacerbated by oversupply in key components like semiconductors and inventory problems in other segments. This slowdown has also affected the export performance of most major Asian exporters, including the Asian NIEs and Malaysia, leading to knock-on effects in transport and communications and entrepot trade.

Inflation. Inflation is not a major concern for Singapore. Throughout the 1990s, inflation has averaged 2.6 percent. An appreciating Singapore dollar (which reduces import costs), low inflation for major trading partners, and a downward trend in commodity prices contributed to the recent decline in inflation. Inflation is likely to remain low as these trends continue.

Labor Market Conditions. During 1995, labor market demand in Singapore was tight because of strong economic growth, with wage pressures moderated by an inflow of foreign workers. Total increase in employment remained strong at 109,000 in 1995, with all key sectors registering a net increase in jobs. The unemployment rate remained low at 2.7 percent in June 1995.

Current Account and Exchange Rate. Singapore continues to run current account surpluses primarily because of its extraordinarily high saving rate. The current account surplus grew to 18 percent of GDP in 1995, and is expected to expand slightly in 1996. The Singapore dollar has been strong. It is expected to register a slight appreciation against the U.S. dollar in 1996.

Fiscal Policy. The government budget surplus was 6.1 percent of GDP in 1995, lower than in 1994. Singapore maintains relatively low taxes, and has recently introduced a goods and service (GST) consumption tax. The stated long-term objective for Singapore continues to be a balanced budget.

Monetary Policy. Singapore has used its monetary policy to achieve a low inflation rate of approximately 2 or 3 percent. The primary monetary policy intermediate tool is a trade-weighted exchange rate.

Singapore

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	48.1	53.3	57.3	66.7	76.6	85.3
Percentage change from previous year						
Real GDP	8.97	7.34	6.22	10.44	10.05	8.76
Private Consumption	7.58	5.84	6.62	10.82	5.45	5.08
Private Investment	10.0	10.6	15.1	12.9	5.8	9.6
Government Consumption	11.03	8.96	2.40	11.86	0.07	12.50
Government Investment	n/a	n/a	n/a	n/a	n/a	n/a
Exports	9.6	12.4	7.2	17.6	27.6	16.1
Imports	14.9n/a	7.4	6.5	19.0	14.7	13.8
Percentage of GDP						
Budget Balance	2.68	4.68	4.86	5.87	7.45	6.08
Current Account Balance	8.27	11.20	11.29	7.21	15.93	17.73
FOB Trade Balance	-9.87	-5.82	-7.86	-8.47	-1.48	-0.88
Percentage change from previous year						
GDP Deflator	4.9	3.4	1.3	5.3	4.4	2.4
CPI	3.4	3.4	2.3	2.2	3.1	1.7
Percentage change from previous year						
Broad Money (M3)	18.41	11.09	8.17	10.86	15.91	10.08
Percent						
Short-Term interest rate	5.05	3.84	2.46	2.26	3.62	3.41
In millions						
Population	2.71	2.76	2.82	2.87	2.93	2.99
As percentage of labor force						
Unemployment Rate	1.7	1.9	2.7	2.7	2.6	2.7

Source: Government of Singapore.

Singapore

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	*7.8*	7.5	7.5	8.0	n/a	8.5	7	n/a	n/a	n/a	7.7
Real Exports	*12.5*		10.1	13.0	n/a	n/a	11-13	n/a	n/a	n/a	n/a
Real Imports	*12.6*		9.5	13.3	n/a	n/a	8-10	n/a	n/a	n/a	n/a
CPI	*1.9*	1.7	2.3	2.4	n/a	1.8	2-2.5	n/a	n/a	n/a	2.2

Data in italics taken from the Asia Pacific Economic Outlook
+ Project Link World Outlook, May 3, 1996
° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available

Chinese Taipei

GDP. GDP growth in 1995 registered 6.0 percent. Exports grew particularly rapidly while the financial and real estate sectors experienced some difficulties. The economy in 1996 has been affected by a slowdown in fixed capital formation, a setback in exports and, again, the lackluster performance of the real sector. Growth is expected to be around 6 percent.

Inflation. Chinese Taipei's moderate and stable inflation is likely to continue. Inflation is expected to be 3.2 percent in 1996.

Labor Market Conditions. The unemployment rate is expected to rise in 1996. For the first eight months of the year, the unemployment rate was 2.5 percent, as a result of the ongoing economic restructuring and lay-offs in the sluggish real estate market as well as the slackening manufacturing industry. Employment in the service sector has seen a faster growth rate than in manufacturing, while wage differentials have narrowed between the manufacturing sector and the higher-paying service sector. This was a result of labor shortages in the manufacturing sector.

Current Account and Exchange Rate. The current account surplus declined in 1995 -- despite an expansion in the merchandise trade surplus. The NT dollar exchange rate was stable in 1994 and 1995. However, it depreciated slightly in the first half of 1996, due to the strengthening US dollar and tensions across the Taiwan strait.

Fiscal Policy. The public sector has been in deficit, but this largely reflects the increase in infrastructure rather than consumption. Increased capital expenditures resulting from infrastructure projects in the Twelve Priority Areas are likely to increase the overall deficit in coming years.

Monetary Policy. Chinese Taipei experienced an outflow of capital in the second half of 1995 and in the first quarter of 1996, which produced a lack of liquidity in the economy. The Central Bank responded by lowering reserve requirement on five occasions and by injecting money through open market operations and the release of postal savings re-deposits into the banking system. Following the successful presidential election, the operations of financial markets very quickly returned to normal. Money supply (M2) growth, however, slowed from 14.8 percent in 1994 to 10.2 percent in 1995. A slower growth is expected in 1996.

Chinese Taipei

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	160.2	179.4	212.2	222.6	241.0	260.2
Percentage change from previous year						
Real GDP	5.39	7.55	6.76	6.32	6.54	6.02
Private Consumption	8.01	7.31	8.86	8.18	8.58	5.0
Private Investment	-7.74	3.45	18.97	10.59	7.85	8.31
Government Consumption	12.53	7.42	4.51	0.56	-1.19	1.29
Government Investment	24.42*	22.63*	15.48*	17.51*	12.88*	3.81*
Exports	0.79	12.82	5.34	7.17	5.45	12.79
Imports	6.04	15.07	12.16	8.27	3.48	9.83
Percentage of GDP						
Budget Balance **	-1.80	-8.10	-8.62	-7.92	-6.71	-7.78
Current Account Balance	6.72	6.70	3.84	3.02	2.55	1.85
FOB Trade Balance	9.32	8.78	6.02	5.2	4.97	5.2
Percentage change from previous year						
GDP Deflator	3.75	3.85	3.93	3.51	1.89	2.14
CPI	4.13	3.62	4.46	2.94	4.09	3.68
Percentage change from previous year						
Broad Money	11.2	15.68	18.61	15.38	14.8	10.09
Percent						
Short-term interest rate	9.57	7.58	7.16	6.78	6.77	6.68
In millions						
Population	20.35	20.56	20.75	20.94	21.13	21.30
As percentage of labor force						
Unemployment Rate	1.67	1.51	1.51	1.45	1.56	1.79

* Government Investment does not include public enterprise for Chinese Taipei
** Fiscal year data

Chinese Taipei

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	5.9	6.0	6.6	6.4	n/a	5.9	n/a	n/a	n/a	n/a	6.2
Real Exports	8.9	n/a	10.6	13.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Real Imports	8.7	n/a	9.1	13.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CPI	3.2	3.6	3.6	3.7	n/a	3.3	n/a	n/a	n/a	n/a	3.7

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

Thailand

GDP. GDP growth remained about 8.6 percent for 1995, and is expected to continue at a slower pace of around 7 - 7.5 percent in 1996. Investment, which amounts to 40 percent of GDP, and increased exports are driving continued growth.

Inflation. Inflation intensified in 1994, and reached 5.8 percent in 1995. Consumer prices rose rapidly due to increased food prices resulting from a drought in 1994 and flooding in 1995. The Thai government has pursued fiscal discipline and prudent monetary policy. Consequently, inflation in 1996 is expected to fall to 5.5 - 5.7 percent.

Labor Market Conditions. Despite a comparatively industrialized economy, Thailand still relies on relatively labor-intensive production. Unemployment has been generally low, remaining below 3 percent since 1993.

Current Account and Exchange Rate. The current account has been persistently in deficit. In 1995, the current account deficit was 8.1 percent of GDP, and the foreign debt was greater than $50 billion. The current account deficit reflects large capital good requirements for the expansion of capacity of industry and the need for infrastructure. Thus, Thailand has experienced large capital inflows despite a saving rate of 34 percent of GDP. Thailand has successfully maintained the pegging of the Baht to a basket of currencies.

Fiscal Policy. In 1995, Thailand had a fiscal surplus equal to 2.7 percent of GDP. The 1996 budget increased capital expenditures as a percentage of total spending, and this increased spending was concentrated on investment in rural areas. Meanwhile, civil service salary growth slowed. At the end of FY 1996, it is expected that the government will experience 9 consecutive years of fiscal surpluses.

Monetary Policy. Throughout 1995, the Bank of Thailand was concerned with overheating, and raised the bank rate 1 percentage point to 10.23 percent after commercial bank lending increased 21 percent in 1994. The Bank of Thailand is expected to continue to pursue its prudent monetary policy with a view to maintaining the stability of the economy.

Thailand

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	85.5	98.0	111.1	124.7	142.8	166.3
Percentage change from previous year						
Real GDP	11.2	8.5	8.1	8.3	8.8	8.6
Private Consumption	12.3	6.6	7.8	8.7	8.0	7.6
Private Investment	29.0	10.1	2.9	12.1	11.8	12.3
Government Consumption	6.9	6.2	6.4	5.1	7.6	8.2
Government Investment	33.4	26.8	26.5	4.5	16.5	12.0
Exports	14.4	23.5	13.2	13.0	21.3	23.6
Imports	29.0	15.4	5.5	12.0	17.6	30.5
Percentage of GDP						
Budget Balance	4.7	4.9	3.1	2.2	1.8	2.7
Current Account Balance	-8.5	-7.7	-5.7	-5.1	-5.6	-8.1
FOB Trade Balance	-7.8	-6.0	-3.6	-3.4	-2.6	-4.9
Percentage change from previous year						
GDP Deflator	5.8	5.7	4.3	3.4	4.5	6.4
CPI	6.0	5.7	4.1	3.3	5.0	5.8
Percentage change from previous year						
Broad Money	26.8	19.9	15.6	18.4	17.6	17.0
Percent						
Short-Term Interest Rate	16.5	14.0	11.5	10.5	11.75	13.75
In millions						
Population	56.3	56.96	57.79	58.34	59.10	59.8
As percentage of labor force						
Unemployment Rate	3.9	3.1	3.0	2.6	2.6	2.6

Thailand

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	7 - 7.5	8.3	8.3	8.3	n/a	8.0	8.0	n/a	n/a	n/a	7.9
Real Exports	10.0-14.0		17.4	17.0	n/a	n/a	15.0	n/a	n/a	n/a	n/a
Real Imports	10.0-13.0		15.1	20.0	n/a	n/a	13.8	n/a	n/a	n/a	n/a
CPI	5.5-5.7	6.0	5.3	5.5	n/a	5.7	5.0	n/a	n/a	n/a	5.0

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996

The United States of America

GDP. The United States should experience continued sustainable growth during 1996-97. Real GDP is predicted to increase at a rate of about 2.2 percent. A number of factors are contributing to the nation's expansionary momentum, including strong business investment in producer durable equipment, rapid increases in real exports, and strong consumer demand for household durable goods (especially high-technology products).

Inflation. Despite relatively low unemployment and high capacity utilization, inflation remained well under control during 1995 and 1996. The core rate of inflation has hovered around 3 percent per year for the last four years.

Labor Market Conditions. Strong economic growth has led to continued low unemployment during 1995-96. Forecasts suggest little change in the unemployment rate during 1996-97. The unemployment rate has remained below 6 percent for over 20 months. There are initial signs that real wages are beginning to rise.

Current Account and Exchange Rate. The dollar appreciated significantly against the yen during 1995-96. The current account deficit for 1995 as a whole widened to $153 billion, but narrowed in the second half of the year. The current account deficit is expected to remain roughly constant over the next two years, but to decline over the next decade or so as the fiscal deficit is eliminated.

Fiscal Policy. Since 1992, the budget deficit has been cut by 60 percent -- from $290 billion (4.9 percent of GDP) in 1992 to $116 billion (1.6 percent of GDP) in 1996. Most private analysts agree that deficit reduction, coupled with a commitment from both Congress and the President to balance the budget by 2002, has significantly lowered interest rates in the United States.

Monetary Policy. The Federal Reserve tightened monetary policy during 1994 and early 1995 to avoid overheating the economy. But when evidence that the nation's rate of growth was slowing emerged in mid-1995, the Fed reacted by lowering the federal funds rate by 25 basis points in July 1995, with further decreases in mid-December and in January 1996. Following a rebound in growth during the first half of 1996, the monetary authorities were increasingly attentive to the threat of inflationary pressures.

United States of America

	1990	1991	1992	1993	1994	1995
In billions of dollars						
Nominal GDP	5743.8	5916.7	6244.4	6552.9	6935.7	7253.8
Percentage change from previous year						
Real GDP	1.29	-0.97	2.72	2.27	3.48	2.03
Private Consumption	1.66	-0.64	2.78	2.84	3.08	2.34
Private Investment	-5.18	-9.74	7.15	8.46	14.27	3.12
Government Consumption	2.3	1.0	-0.1	-0.02	0.2	-0.3
Government Investment	6.3	-1.2	3.4	-1.2	-1.3	1.9
Exports	8.50	6.29	6.58	2.94	8.17	8.91
Imports	3.87	-0.65	7.51	9.17	11.97	7.99
Percentage of GDP						
Budget Balance	-4.0	-4.7	-4.9	-4.1	-3.1	-2.3
Current Account Balance	-1.64	-0.16	-1.00	-1.53	-2.14	-2.04
FOB Trade Balance	-1.40	-0.50	-0.61	-1.10	-1.50	-1.45
Percentage change from previous year						
GDP Deflator*	4.62	3.36	2.64	2.48	2.32	2.46
CPI	5.40	4.23	3.03	2.95	2.61	2.81
Percentage change from previous year						
Broad Money	5.48	3.67	1.97	1.18	1.40	2.13
Percent						
Short-Term Interest Rate	7.51	5.41	3.46	3.02	4.27	5.51
In millions						
Population	249.40	252.14	255.04	257.80	260.35	262.76
As percentage of labor force						
Unemployment Rate	5.6	6.8	7.5	6.9	6.1	5.6

* Fourth quarter over fourth quarter growth rate.

United States of America

Percentage change from previous year											
	1996						1996-1999				
	official	IMF	PECC	ADB	LINK+	con-sensus°	official	PECC	ADB	LINK+	con-sensus°
Real GDP	2.2	2.4	1.7	n/a	2.0	2.3	2.3	n/a	n/a	2.3*	2.3
Real Exports	7.7	n/a	8.8	n/a	8.4	n/a	n/a	n/a	n/a	7.5*	n/a
Real Imports	6.1	n/a	3.9	n/a	4.8	n/a	n/a	n/a	n/a	4.6*	n/a
CPI	2.8	2.8	2.6	n/a	n/a	3.0	2.7	n/a	n/a	n/a	3.0

° Blue Chip Private Sector Consensus forecast, August 1996; consensus forecasts are for 1996 and 1997; aggregate consensus forecasts for 1996-1999 are not available
+ Project Link World Outlook, May 3, 1996
*Data refers to 1997, not 1996-1999

2. Sustainable Growth and Equitable Development

The Osaka Action Agenda calls for APEC economies to "support sustainable growth and equitable development in the Asia Pacific region while reducing economic disparities among APEC economies and improving economic and social well-being." This chapter examines the bases of sustainable growth and equitable development.[2] By documenting the benefits of economic and technical cooperation, this chapter complements the APEC Economic Committee's *Report on the State of Economic and Technical Cooperation in APEC*. Its organization reflects the organization of its sister publication.

Economic growth is largely a process of mobilizing productive resources and adapting and developing technologies to enhance the productivity of those resources. The growth accounting framework embodies this logic by splitting total growth into three components: labor force development, physical capital investment, and total factor productivity (which measures the productivity with which physical and human capital is deployed).[3]

The focus on economic growth warrants some justification. Economic growth is not an end in itself. Rather, it is the means to an end -- higher living standards and enriched lives for the citizens of the world. Over the long run, growth is the key to higher wages and to an increase in the resources available to people within the economy. While growth is thus central to achieving higher living standards, many dimensions of living standards are not adequately captured in conventional economic measures. For example, the benefits of clean air and water or improved economic security are not included in conventional measures of output. Nor do aggregate measures provide any information about how the increased resources are distributed amongst a population within an economy.

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[2]The 1995 *Economic Outlook* identified several key initiatives for achieving sustained economic growth, including enhancing competition, mobilizing labor and capital resources, promoting technological innovation, and securing a stable macroeconomic environment. This report builds on that analysis, by adopting a formal growth accounting framework to study sustainable and equitable growth.

[3]To describe the growth relationship formally, assume $Y=AF(K,L)$, where Y is output, A is a measure of total factor productivity, K is the capital stock, and L is the labor force. Then assuming that factors are paid their marginal products, the growth rate of Y is equal to the growth rate of A (multifactor productivity growth), plus the capital share multiplied by the growth rate of K, plus the labor share multiplied by the growth rate of L.

In the first part of the chapter, we examine each of the components of growth in more detail. In the second part, we explore broader structural issues that may affect the allocation of resources across sectors of the economy, as well as sustainable development issues such as environmental and agricultural policies.

2.1. Labor Force Development

Labor force development is a fundamental component of growth in output. Labor force development translates into higher output through three basic channels: increases in output per hour (labor productivity), increases in the number of workers (labor force), and increases in hours per worker. This section will examine the relationship between human capital and labor productivity, determinants of labor force participation decisions and migration patterns.

Human capital investment

This section discusses the benefits of human capital investment and examines the ways in which governments can play a useful role in maximizing those benefits.

The value of investments in human capital

Investing in human capital -- primarily through education and training -- can raise economic growth, reduce income inequality, and reduce structural unemployment. Human capital investments provide multiple benefits. As Benjamin Franklin once noted: "An investment in knowledge pays the best interest."

Higher economic growth

Better trained, better educated, and more experienced workers are generally more productive and more adept at implementing productivity-enhancing technical change. Human capital accumulation may thus raise both the level of productivity and the long-run growth rate. .
Economies with the highest initial levels of education in 1960 or 1965 typically grew the fastest in subsequent decades.[4] According to a recent study, the private return to education across a large number of economies averages between 10 and 20 percent.[5] In the United States, where the issue

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[4]Robert Barro, "Economic Growth in a Cross Section of Economies," *Quarterly Journal of Economics*, vol. 106, May 1991; N. Gregory Mankiw, David Romer, and David Weil, "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics*, vol. 107, May 1992.

[5]George Psacharopolous, "Returns to Investment in Education: A Global Update," *World Bank Policy Research Working Paper No. 1067 (*Washington, DC: World Bank, 1993). Also see, Richard Freeman and Larry Katz,

has been studied extensively, an additional year of schooling is thought to raise future earnings by between 5 and 15 percent.[6] In a sample of 87 economies, a one-standard-deviation increase (0.7 years) in average years of male secondary schooling was associated with an increase in real per capita GDP growth of 1.1 percentage points per year; a one-standard-deviation increase (0.09 years) in male higher education was associated with an increase in the growth rate of 0.5 percentage points per year. A one-standard-deviation increase (1.5 percentage points) in the ratio of government education spending to GDP raised the growth rate by 0.3 percentage points per year.[7]

In a study of the East Asian growth "miracle," the World Bank found that primary education was the most important factor explaining predicted growth rates in high-performing Asian economies between 1960 and 1985. According to the World Bank, between 58 percent (Japan) and 87 percent (Thailand) of predicted growth was due to growth in primary school enrollment rates.[8] Secondary school enrollment was also an important explanation of growth.[9]

Although the mechanism by which increases in human capital investment affects economic growth warrants further investigation, are remain subjects for continuing investigation, most studies have stressed the interactions between human capital and technological advances.[10] Higher human

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"Rising Wage Inequality: The United States vs. Other Economies," in Richard Freeman, ed., *Working Under Different Rules* (New York: Russell Sage Foundation, 1994).

[6]Council of Economic Advisors, *Economic Report of the President 1996* (Washington: Government Printing Office, 1996), p. 196. Economists continue to argue over whether education itself is the cause of higher earnings, or whether it merely proxies for unmeasured characteristics -- such as innate skill -- that are the true cause. Recent studies using education differences across twins (who are assumed to have similar innate skill levels), other natural experiments (such as compulsory schooling rules), and random assignments suggest that education does in fact raise earnings.

[7]Robert Barro and Xavier Sala-I-Martin, *Economic Growth* (New York: McGraw Hill, 1995), Chapter 12.

[8]World Bank, *The East Asian Miracle: Economic Growth and Public Policy* (Oxford: Oxford University Press, 1993): 52. The "contribution" to growth is calculated by multiplying the variable value in a specific economy by the relevant coefficient from a cross-sectional Barro-type growth regression.

[9] While the World Bank studies cited above indicate that primary (especially) and secondary schooling seem to have greater impacts on spurring growth, some theorists have speculated that the payoffs to higher education (which can be substantial in more advanced economies) depend on obtaining a threshold level of earlier schooling. Higher education investments also contribute to economic growth through spill-over effects on science, technological development, and managerial innovation.

[10]For models in which human capital affects the speed of technological invention and diffusion, see, for example, Richard Nelson and Edmund Phelps, "Investment in humans, technological diffusion, and economic growth," *American Economic Review*, vol. 61, 1966, pp. 69-75; Paul Romer, "Endogenous Technological Change," *Journal of Political Economy*, vol. 98, 1990, S71-S102; and Gene Grossman and Elhahan Helpman, *Innovation and Growth in the Global Economy* (Cambridge, MA: MIT Press, 1992), Chapter 5.

capital tends to expand the capacity of economies to adopt and invent new technologies.[11] Empirical evidence at the firm level shows that a higher level of human capital may facilitate the adoption of new technologies.[12] Human capital is also a complement to physical capital: Higher levels of human capital induce higher levels of physical capital investment, thus boosting growth.[13]

It is clear that education is a crucial determinant of economic growth and improved living standards, both at the economy-wide and individual levels. Indeed, the linkage between higher education levels and higher individual earnings is one of the best established empirical regularities in economics.[14]

Reduce income inequality

In addition to raising average incomes, education attenuates income inequality. By expanding the supply of skilled workers relative to unskilled workers, higher levels of education narrow income differentials that arise from skill differentials and thus tend to compress the wage distribution. An expanding body of literature suggests that higher growth rates tend to be associated with lower income inequality.[15]

Analyses of the impact of education on inequality are complicated because causality runs in both directions. Higher educational activity may reduce inequality. Similarly, reduced inequality may also raise educational activity. As the distribution of income in an economy becomes more

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[11]See, for example, Jess Benhabib and Mark Spiegal, "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Economy Data," *Journal of Monetary Economics*, vol. 34, 1994; and David Coe, Elhahan Helpman, and Alexander Hoffmaister, "North-South R&D Spill-overs," *NBER Working Paper No. 5048* (Cambridge, MA: National Bureau of Economic Research, 1995).

[12]See Bartel, Ann P., and Lichtenberg Frank R., "The Comparative Advantage of Educated Workers in Implementing New Technology," *Review of Economics and Statistics*, vol. 69, n. 1, February 1987.

[13]Robert Lucas points to the low level of human capital in explaining the low levels of physical capital inflows to developing economies. See Robert Lucas, "Why doesn't capital flow from rich to poor economies?" *American Economic Review*, vol. 80, 1990, pp. 92-96. The result is supported by empirical evidence in Jess Benhabib and Mark Spiegal, "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Economy Data," *Journal of Monetary Economics*, vol. 34, 1994.

[14]See review by Robert Willis, "Wage Determinants: A Survey and Reinterpretation of Human Capital Earnings Functions," in Orley Ashenfelter and Richard Layard, eds., *Handbook of Labor Economics*, vol. 1 (New York: Elsevier Publishers, 1986).

[15]T. Persson and G. Tabellini, "Is Inequality Harmful for Growth?" *American Economic Review*, vol. 84, n. 3, June 1994, pp. 600-621. This research, along with other studies on the topic, also notes difficult issues of mutual causality between inequality and economic growth.

equal, access to education is expanded. Increased access may boost overall enrollment rates.[16] Evidence from a variety of economies indicates that the income elasticity of primary and secondary enrollment rates is approximately 0.4.[17] Therefore, if the income distribution in Brazil were as equal as in Malaysia (ceteris paribus), enrollments among poor Brazilian children would be about a third higher.[18]

It is impossible to resolve the causality issue definitively. Across economies, though, it is evident that higher primary and secondary enrollment rates tend to be associated with more equal distributions of income. In a cross-section of more than 80 economies, there is a strong negative correlation between basic enrollment rates and the level of income inequality, as measured by Gini coefficient.[19]

Reduce structural unemployment

Investments in human capital can also help reduce structural unemployment within an economy. Structural unemployment occurs when there are mismatches between the skills demanded by the labor market at a given time period and the skill mix of the population. These mismatches reduce the effective capacity of an economy by placing a limit on the level of steady-state growth that can be sustained before being constrained by labor scarcity, inflation, and macroeconomic instability.[20]

Structural unemployment affects both lower and higher income economies. Mismatches in lower income developing economies can occur in the transition between primarily agrarian and skilled craft economic activities and light/heavy industrial manufacturing activities. In higher income economies, structural unemployment may result from the transition between a

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[16]Ronald Benabou, for example, proposes a model in which higher inequality inhibits certain segments of society from acquiring human capital. The lower level of aggregate human capital then reduces output. See Ronald Benabou, "The Workings of a City: Location, Education, and Production," *MIT Working Paper No. 582* (May 1991).

[17]T. Paul Schultz, "Education Investment and Returns," in Hollis B. Chenery and T. N. Srinivasan, eds., *Handbook of Development Economics*, vol. 1 (Amsterdam: North Holland, 1988).

[18]This example is taken from the World Bank, *The East Asian Miracle: Economic Growth and Public Policy*, 1993, *op. cit.*, p. 196.

[19]George Clarke, "More Evidence on Income Distribution and Growth," *Policy Research Working Paper No. 1064* (Washington: World Bank Policy Research Department, 1992).

[20] Richard Layard, Stephen Nickell, and Richard Jackman, *Unemployment: Macroeconomic Performance and the Labor Market* (Oxford: Oxford University Press, 1991).

manufacturing/industry focus and a service sector/high technology focus. By pursuing investments in human capital to remedy skill mismatches, both higher and lower income APEC economies can ease job transitions and reduce structural unemployment.[21] In the United States, for example, evidence suggests that better-educated workers have higher re-employment probabilities and suffer smaller percentage wage losses upon re-employment than less-educated workers.[22]

The role of public policy

Higher education levels raise incomes, reduce income inequality, and minimize structural unemployment. But these salubrious results do not necessarily suggest, by themselves, the need for public policy to promote education. If there are no market imperfections -- so that the private returns to education are as high as the social returns -- individuals will undertake the optimal level of human capital investment without any government involvement at all. Public policies must therefore be predicated on the imperfections -- such as credit constraints and positive externalities -- that affect the market for education.

Private lenders are often hesitant to make loans for educational purposes. Human capital can not be repossessed like a house or a car, and families without other significant current assets often have trouble obtaining educational loans. Policies can address these credit market imperfections by expanding access to lending programs (through loans themselves or through loan guarantees) or by reducing the direct cost of schooling to students (for example, by not charging for public school attendance). In the United States, the Federal government's new direct lending program is intended to address precisely these issues by providing educational financing in a less costly, more flexible manner.[23]

As discussed above, the process of education may also produce positive externalities, which generate a need for a public role in the promotion and financing of schooling. For example, a highly educated individual may boost not only her own income but also the income of other members of

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21 Section 2.5 of this outlook, *supra*, discusses potential economic and technical cooperation strategies to reduce structural unemployment resulting from skills mismatches in the APEC region.

22 Henry Farber, "The Analysis of Interfirm Worker Mobility," *Journal of Labor Economics*, vol. 12, n. 4 (October 1994), pp. 551-91.

23 For a discussion of the direct lending program, see the Council of Economic Advisers, *Economic Report of the President* 1996, 1996, *op. cit*., p 218-219.

society, through spill-overs from her innovative ideas and activities. Since the individual is not fully compensated for the benefits to the society as a whole, human capital investment will be below the socially desirable level.[24]

Table 1: Primary school pupil-teacher ratio in APEC economies

Economy	Primary pupil-teacher ratio (1991)
People's Republic of China	22
Indonesia	23
Philippines	33
Papua New Guinea	31
Thailand	18
Chile	25
Malaysia	20
Mexico	30
Republic of Korea	34
New Zealand	19
Hong Kong	27
Singapore	26
Australia	17
Canada	15
United States	NA
Chinese Taipei	27
Japan	21

Source: *World Bank Development Report 1994* (Oxford: Oxford University Press, 1994), Table 28, and economy sources.

[24] Boyan Jovanovic and Rafael Rob, "The Growth and Diffusion of Knowledge," *Review of Economic Studies*, vol. 56, n. 4, (Oct. 1989), pp. 569-83.

As the World Bank has highlighted, the differential between social and private returns to education is highest at the primary level. In high-performing Asian economies, expenditures on primary education are higher as a percentage of income than in other economies, even though overall education expenditures are not. For example, the World Bank notes that public expenditure on education in Venezuela in 1985 amounted to 4.3 percent of GNP -- relative to 2.8 percent in Hong Kong, 3.0 percent in the Republic of Korea, and 3.2 percent in Thailand. But public expenditure on basic education was 1.3 percent of GNP in Venezuela, 1.9 percent in Hong Kong, 2.5 percent in the Republic of Korea, and 2.6 percent in Thailand.[25] Although primary enrollment rates are near 100 percent in almost all APEC economies, the economies exhibit a high degree of variation in the quality of and level of investment in primary education. Table 1 above shows primary pupil-teacher ratios, which reflects, in part, primary school spending and quality, in the APEC economies.

There is now broad consensus in the economic literature that subsidizing the universal availability of education is a wise investment for a developing economy. Widespread access to such education has positive effects on equity and is likely to enhance growth in developing economies.

In summary, education raises productivity and reduces inequality and structural unemployment. The government has a crucial role to play in providing education. Credit market imperfections and positive externalities suggest that the private sector on its own would fail to provide the socially optimal level of education. *Ensuring widespread access to and investing in high-quality education is one of the most fundamental ways in which governments can boost living standards.*

Labor force participation

Increased participation in the labor force -- increased labor inputs -- is a second crucial way in which labor force development raises growth. In industrialized economies, the long-term trend has been towards a reduction in average hours per worker. As an individual's income rises, he or she desires more leisure time. Therefore, growth in the number of workers has been crucial to maintaining output growth. In the United States, for example, annual growth in the labor force

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[25]World Bank, *The East Asian Miracle: Economic Growth and Public Policy*, 1993, *op. cit.*, p. 199.

accounted for over half of the annual growth in total output between 1981 and 1995.[26] And in the developing economies of East Asia and the Pacific, annual growth in the labor force accounted for almost a third of annual growth in output between 1980 and 1992.[27] Since growth in the working age population is largely (but not completely) beyond the realm of economic policy, this section takes growth in the working age population as given, and explores the determinants and trends in labor force participation.

Time spent in work and time spent in leisure are often mutually exclusive. Therefore, the extent to which an individual values leisure time over other consumption items is an important factor in labor force participation. A second factor affecting participation in the official labor force is the marginal product of labor at home relative to the marginal product in the market -- the higher the marginal product in the market, the more workers substitute out of home production and into market work. [28] Another factor is family structure; decisions about labor force participation are most often made jointly within the household. For example, a household can choose to allocate some time of all members to the labor force, or it may decide that some members will dedicate their time exclusively to household production while others work exclusively in the labor market.

Wage rates are often an important determinant of participation. The relationship is not a simple one, however. At low levels of wages and hours worked, people tend to work more in response to an increase in the wage; that is, the "cost" of an hour not spent in the labor market increases and the person consumes less leisure (the substitution effect). As wages continue to rise, however, the person may decide to forgo some additional consumption of other goods in exchange for another hour of leisure, and decide to work less (the income effect). In the context of the household, these relationships become even more complex. Not only is an individual's participation influenced by his or her own wage, but also by the wages of other family members.

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26 Council of Economic Advisers, *Economic Report of the President,* 1996*, op. cit.*, Table 2-2.

27 World Bank, *World Development Report 1994: Infrastructure for Development* (New York: Oxford University Press, 1994), Tables 1 and 25.

28 This is making the neoclassical assumption that workers get paid their marginal product of labor.

Defining Labor Force Participation

The distinction between participating and not participating in the labor force is sometimes rather arbitrary. For example, under most definitions, a spouse who keeps house and prepares the family's meals is generally not considered to be in the labor force. By contrast, a woman who receives payment for doing these same chores for another family is counted. In 1993, unpaid household and community output amounted to $16 trillion (relative to $23 trillion in recorded world output), of which women accounted for $11 trillion.[29]

The standard definition of labor force participation includes wage and salary earners, the self-employed and unpaid family workers who produce goods and services for sale in the market, and those unemployed who are actively seeking work. The most common definition also includes almost all part-time workers, except those with very minimal hours.

Many types of workers are not included in the standard definition of the labor force. First, workers involved solely in home production are not considered to be in the labor force, even though they are contributing to output. (In most economies, women continue to hold primary responsibility for child-care in the home. This factor tends to lower the official labor force participation rate for women, even though they are contributing to output.) Second, students who are not concurrently employed while attending school are considered to be out of the labor force, even though they are contributing to future economic activity by investing in their human capital. Third, discouraged workers are an important omission from the formal definition of labor force participation. Discouraged workers are those unemployed who feel their prospects of getting a job are so slight that they have given up searching for work. Discouraged workers can be large in relation to the pool of the unemployed. For example, Japan's standard unemployment rate is half that of the United States. But when discouraged workers are included for both economies, the "unemployment" rates are similar. Finally, standard definitions of labor force participation may fail to capture workers in informal markets (e.g., baby sitters) or workers who dedicate very few hours to labor market activity.

The distribution of time dedicated to home production and to the market varies significantly over time, across cultures, levels of development, and gender groups. A family on a small farm in Korea in the late 1800s may have produced nearly all the goods they consumed, with little surplus to trade for other goods in the market. By contrast, an urban working couple in New Zealand today may send their children to day-care, eat many meals in restaurants, and hire someone to do chores in the home, thus dedicating little time themselves to home production. The common rise in labor force participation as an economy develops may be the result of a substitution effect . As potential participants can earn more in the market than their value of time spent in home production or leisure, the incentive to enter the labor force increases. For example, between 1966 and 1990 the employed

share of the population increased from 38 percent to 49 percent in Hong Kong, from 27 to 36 percent in South Korea, from 28 to 37 percent in Chinese Taipei, and from 27 to an astounding 51 percent in Singapore -- spurring overall growth in all these economies.[30] As development continues, the income effect may become more important and one member of the household may choose not to participate in the market.

Men's labor force participation follows similar patterns across economies, with overall measured participation rates lower in less-developed economies with large agricultural sectors. Men's participation rates have also been falling slightly over time in the most highly developed economies as market opportunities for women have expanded. In many economies, the labor force participation rate for males aged 25 to 49 is above 95 percent. The profile of labor force participation at different ages is remarkably similar across economies, with participation rising from ages 15 to 24, constant from 25 to 49, then dropping slightly to age 54, after which it falls off more steeply. As age increases, a larger fraction of men become self-employed.

In contrast, women's participation varies significantly across economies and over time depending, in part, on cultural factors. In many cultures, the primary responsibility for child care falls on mothers, and women may be discouraged from participating formally in the labor force, whereas in other cultures, child-care is seen as a community responsibility and women are expected to participate fully in the labor force. Generally speaking, women tend to participate less in the formal labor force while contributing more hours than men to household production. Studies across economies often show women working more total hours than men, even though formal participation is lower. With some exceptions, participation in the highly developed economies increased fairly rapidly from the mid-1960s to the mid-1980s as women broke down discriminatory barriers in the market and expectations changed.[31] Overall participation rates for women are highest is the former communist-block and Scandinavian economies, where many of the discriminatory barriers to women's labor force participation have been broken down. Overall participation is also high in the

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29 United Nations Development Programme, *Human Development Report 1996* (New York: Oxford University Press, 1996), p. 52.

30 World Bank, *The East Asian Miracle: Economic Growth and Public Policy,* 1993*, op. cit.*

31 After a time, however, participation rates and wage gains leveled out. In addition, not all economies followed this basic pattern. Structural change in Japan, for example, led to the decline of the number of agricultural households after 1960. Women's overall employment fell in tandem with the falling rate of employment in agriculture and forestry; on the other hand, the participation rate of women in the worker household rose and the female participation rate began to rise again in 1975.

most developed economies, where families have been able to invest in education for girls and women, thereby raising the wage rates that women can command on the market. As more APEC member economies continue to experience substantial growth and further development, it is likely that the labor force participation of women will continue to rise.

The role of public policy

Raising the level of labor force participation promotes growth, often reduces income disparities, and even affects structural unemployment. Fixed monetary costs--such as the cost of day care for children -- or implicit costs -- such as time spent commuting -- affect labor force participation Various public policy strategies, which reduce such costs can raise a nation's labor force participation rate. Investment in transportation and institutional reforms help structural impediments to labor market participation.[32]

Even within a geographic region, shifts in economic activity occur more rapidly than corresponding shifts in residence patterns.[33] Targeted investments in public transportation and general transportation infrastructure can help boost participation. Similarly, provision of affordable day care may augment labor force participation, especially among women.

Changes in legal rules governing labor negotiations, the regulatory regime for particular occupations, or the default provisions governing an employee-employer relationship in the absence of specific provisions can also affect potential labor market entrants. Providing a minimum standard for word place health and safety may increase labor force participation (ceteris paribus), by decreasing the reservation wage of potential participants.[34] Legal provisions protecting

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32 The ability of government policies to raise labor force participation does not necessarily suggest that such policies are socially optimal.

33 See World Bank, *Infrastructure Development in East Asia and the Pacific: Towards a New Public-Private Partnership* (Washington, DC: World Bank, 1995).

34 At least in theory, the effect obtains only to the extent that workers value the improved conditions more than firms must pay to provide them (if not, there will be change in the total cost of hiring labor -- including both direct compensation and the costs of creating a better work environment -- and therefore no incentive to hire more workers). In any case, care should be taken to ensure than such laws do not discriminate against workers on the basis of race or sex. In many economies the structure of laws governing labor and economic relations have a long history of attempts to "protect" female workers by, for example, making the hours they may work more restrictive than men's. While such laws may be well-intentioned, they often serve to reduce employment

women from labor discrimination can boost their labor force participation and change the size and character of the labor pool, especially in certain sectors of the economy where they have faced systematic discrimination. Dissemination of information about worker benefits may also raise participation. If there is imperfect information and potential labor market entrants are uncertain about the benefits that they will secure through employment, then they will be less likely to enter.[35]

Labor mobility

Economic theory suggests that labor tends to move from economies with low wage rates or other unfavorable characteristics to those with high wage rates or other favorable characteristics. Although this implies that labor mobility is similar to capital mobility in encouraging convergence across economies, empirical evidence suggests that migration plays only a minor role in the convergence story.[36]

Nonetheless, emigration and immigration do affect the size and make-up of the labor force, and thus the growth process. The purpose of this section is to explore recent trends in migration, as well as the impact of labor mobility on economic performance in the migrants' areas of origin and destination.

Trends in labor migration

Lower transportation costs in the 20th century have greatly increased labor mobility. At least 125 million people now live outside their economy or economy of origin.[37] Migrants are increasingly from poor economies. More than half the global flow of migrants is now between

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opportunities or wages for women, and may reduce their labor force participation or even force them into underground employment where even minimal standards do not exist.

35 Yoram Barzel, *Economic Analysis of Property Rights* (Cambridge, England: Cambridge University Press, 1991), pp. 62-76 (discussing how the reduction in uncertainty transaction costs promotes the development of rights in contracting and spurs individuals to undertake a greater level of the given contracting activities).

36 *Ibid*., p. 413.

37 World Bank, *World Development Report 1995: Infrastructure for Development* (New York: Oxford University Press, 1995).

developing economies, such as South Asians going to oil-rich economies in the Middle East and newly industrializing economies in East Asia.

Until the mid-1980s, intra Asian-Pacific labor migration was largely limited to inflows of workers to Singapore, Hong Kong and Brunei from labor-surplus economies in the vicinity. Since then, labor scarcities in high growth economies, such as Japan, Chinese Taipei, South Korea, Malaysia, and Thailand, have triggered new patterns of intra Asian migration. Economies which once exported labor, such as South Korea and Chinese Taipei, are now importing labor. Intra-regional labor flows have already reached significant levels, prompting some to name the Asia-Pacific region the "newest international migratory system" or the "newest migratory pole."[38] There are already at least one million migrant workers in South Korea, Chinese Taipei, Hong Kong, Singapore, Japan and Malaysia.[39] Recently, there has been an increase in the flow of more highly skilled labor.[40] The emerging trends of intra-regional migration impact processes of industrial restructuring and economic and political relations among economies in the region.

The economic impact of international migration

International labor flows have offer benefits to both home and host economies.[41] Migrants are often more productive -- and may ultimately reduce labor costs -- in the host economy. In addition, the remittances they send to relatives back home boost income in the (usually poorer) home economy.[42]

Household members move to where the jobs are. By providing means for families to diversify income sources, migration is a form of insurance. Households may send one person to work in the city while others stay on the family farm or in the local wage economy. Movement may be temporary, as migrants pursue seasonal jobs, often crossing national boundaries. Notable

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[38] Salt, John, *The British Population: Patterns, Trends, and Processes* (Oxford: Oxford University Press, 1992).

[39] P. Athukorala. "International Labor Migration in the Asian-Pacific Region: patterns, policies and economic implications." *Asian-Pacific Economic Literature*, November 1993, pp. 28-57.

[40] *Ibid.,* p. 37.

[41] The World Bank , *World Development Report 1995: Infrastructure for Development,* 1995*, op. cit.*

[42] Riccardo Faini, "Workers' Remittances and the Real Exchange Rate: A Quantitative Framework." *Journal of Population Economics*, vol. 7, n. 2, 1994. Some research indicates that remittances do more than bolster immediate consumption. They also serve as income for savings and investment. Richard P. C. Brown, "Migrants' Remittances, Savings and Investment in the South Pacific" *International Labor Review*, vol. 133, n. 3, 1994.

examples include Indonesian farm laborers traveling to Malaysia and Mexican workers traveling to the United States.[43]

Implications for labor-exporting economies

Labor-exporting economies generally reap considerable gains from migration, primarily through remittances.[44] Because international wage differences are so large, the amounts remitted are often a multiple of what the migrants could have earned at home -- about double in the case of Korean and Filipino emigrants.[45] Official remittances as a percentage of total export earnings in 1988-91 were 12 percent in the Philippines, 4 percent in Thailand, 2 percent in South Korea and 1 percent in Indonesia.[46] The official figures are likely to be underestimates, as much is remitted through informal channels.

Migration also eases pressure on the home nation's labor market. Various studies conducted in the Philippines and Thailand, and South-Asian labor-exporting economies, such as Bangladesh, India, Pakistan and Sri Lanka, indicate that labor migration has acted as a safety valve to unemployment pressures in labor-exporting economies, without discernible adverse effects on output.[47]

The occupational skills and behavioral norms that workers gain through foreign employment are often cited as exerting an additional positive effect on the developmental process in the labor-exporting economies. However, some studies have raised the possibility of skill loss because workers do not work at jobs commensurate with their occupational skills.[48]

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[43]The World Bank, *World Development Report 1995: Infrastructure for Development*, 1995 *op. cit.*, p. 25.

[44]Athukorala, "International Labor Migration in the Asian-Pacific Region: patterns, policies and economic implications," *Asian-Pacific Economic Literature*, 1993, *op. cit.*, p. 47.

[45]The World Bank, *World Development Report 1995: Infrastructure for Development,* 1995, *op. cit.*, pp. 66 -69.

[46]Athukorala, "International Labor Migration in the Asian-Pacific Region: patterns, policies and economic implications." *Asian-Pacific Economic Literature*, 1993, *op. cit.*, pp. 47-48.

[47]Amjad, Rashid, To the Gulf and Back: Studies on the Economic Impact of Asian Labor Migration (New York: United Economies Development Programme, 1989).

[48]Athukorala, "International Labor Migration in the Asian-Pacific Region: patterns, policies and economic implications." *Asian-Pacific Economic Literature*, 1993, *op. cit.*, pp. 47.

Admittedly, labor migration can have some deleterious effects.[49] Even if the positions vacated by outgoing migrants are filled by new recruits from the pool of the unemployed, output can suffer if the more experienced workers have left. Specific sectors of the economy may suffer if out-migration is sector-specific (as happened in South Korea following the massive outflow of construction workers to the Middle East).

Implications for labor-importing economies

Receiving economies, particularly industrial economies, also usually gain from migration. Both skilled and unskilled migrants can benefit the recipient economy. Skilled workers provide human capital to the recipient economy without imposing the costs of training and education (the mirror image of the "brain drain" in the economy of emigration). When industrialized economies suffer a shortage of labor in some unskilled jobs, inflows of unskilled migrants benefit capital holders and the more skilled segments of the labor force. Unskilled immigrants can, however, hurt unskilled native workers by depressing wages.[50]

There have been several studies of the economic effects of labor immigration in Singapore. The consensus emerging from theses studies is that the nation's dependence on both skilled and unskilled foreign labor has contributed to its economic dynamism and flexibility.[51] The social and economic benefits of foreign workers appear to have outweighed the costs (such as congestion and the demand for public services).

In the United States, opinion is presently divided on the net benefits of immigration for the U.S. economy and society. Nonetheless, most economic research through the 1980's indicated that immigrants did not significantly displace native workers and that, on balance, most immigration flows generated net benefits for the United States.[52]

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[49] *Ibid.,* p. 47.

[50] Though this effect could be partly offset by a slight dampening effect on wage inflation.

[51] Lim, Linda Y.C. and Pang, Eng Fong, "Vertical Linkages and Multinational Enterprises in Developing Economies," *World Development*, vol. 10, n. 7, July 1982; Pang, Eng Fong, "Singapore: Market-Led Adjustments in an Interventionist State," in Hugh, Patrick, ed., *Pacific Basin Industries in Distress: Structural Adjustments and Trade Policy in the Nine Industrialized Economies* (New York: Columbia University Press, 1991).

Labor mobility and qualification standards

Qualification standards and credentials often serve a critical purpose by facilitating signals about individuals' skills and education. Disparities in qualification standards across economies make it difficult for the signaling process to function across national boundaries. This may affect labor mobility and result in the underutilization of valuable human capital.

One approach to surmounting this disjuncture involves generalizing (to the extent possible) the occupational, skill, and professional qualification standards employed in a region, as many economies have sought to do through bilateral arrangements.[53] As long as the standards are valid -- so that they do not dilute the quality of genuine academic and licensing requirements -- mutual recognition can substantially aid the efficient functioning of labor markets.

In some economies, such as the United States, there are limitations on the extent that a government can directly control the recognition of foreign qualifications as a result of government institutional design, federalism, and the potential role of the private sector and professional associations in maintaining professional credentials.[54] Nonetheless, governments can promote exchanges of information on standards between validating organizations (such as universities or professional associations) across economies. Multilateral efforts can also promote the discussion and adaptation of successful credentialing practices in member economies, and provide a basis for future voluntary convergence of qualification standards.

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[52] See discussion and citations in Rachel Friedberg and Jennifer Hunt, "The Impact of Immigrants on Host Country Wages, Employment and Growth," *Journal of Economic Perspectives*, vol. 9, n. 2, Spring 1995, pp. 23-44.

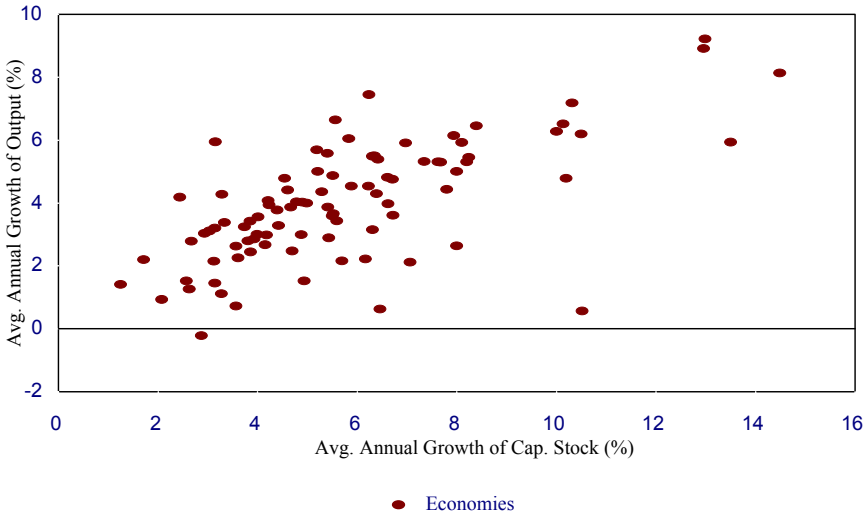
[53] The European Union's efforts in this area are perhaps the best-known example.

[54] For example, in the case of the United States, the federal government has no direct policy control over institutions of higher education, state education and licensing authorities, or professional associations and licensing bodies sponsored by the private sector. These organizations have often been included in international discussions on qualifications, taking the substantive lead while the U.S. government provides legitimacy, cohesion, and advice in an international context.

2.2 Physical Capital Accumulation

Capital accumulation through net investment is critical to achieving and sustaining economic growth. [55] Economic growth and high investment rates are clearly a virtuous circle, reinforcing each other and improving overall performance. The strongest determinants of investment in most economies are current and expected future growth in output.[56]

Chart 1: Average annual growth rate and capital stock increases in 95 economies (1960-62 to 1986-88)



[55] The factors initiating these self-reinforcing relationships of investment and growth are the subject of a lively debate. Among the APEC members, the initiation of rapid growth has generally come from a shift in policy, often involving trade liberalization and an emphasis on export growth.

[56] Under simple assumptions, the contribution to growth from a factor of production is equal to the income share of that factor multiplied by its growth rate. Physical capital's share of income is about half that of labor's share -- suggesting that all else being equal, the contribution to growth from physical capital is relatively small compared to labor's contribution. But this comparison could be misleading, in that investment is often crucial to achieving rapid growth. Much of productivity growth is through technology that is embodied in particular machines (or in particular skills) and investment is therefore a necessary concomitant to technological progress. Labor's share of income in developed economies is typically about two-thirds. But it is often lower in developing economies, and rises during the development process. For a discussion of the time-varying nature of labor's share within the OECD economies, see Jonathan Orszag, "What's Happened to Labor's Slice of the Pie? Movements in Labor's Share from 1850 to 1990," *Senior Thesis, Department of Economics, Princeton University*, (April 2, 1996).

The relationship between physical capital accumulation and economic growth is shown in Chart 1, which covers 92 developed and developing economies over the past generation.[57] Although physical capital investment does not completely determine economic growth, the relationship between physical capital investment and economic growth is clearly positive.[58]

While members of APEC differ amongst themselves in terms of economic performance indicators and in rates of growth over the postwar period, they are distinct from other economies in two respects. First, several of the East Asian APEC members have had the highest rates of economic growth and growth of the capital stock since 1960. Second, APEC members have reaped a relatively high growth payoff for the investment in physical capital that they have undertaken (as shown by being "high and to the left" in the chart). The interesting questions are: How were APEC economies able to achieve high rates of investment, and what accounts for the relatively high rates of return from the investment undertaken?

Physical investment across economies

The share of output devoted to investment has varied widely across the APEC economies. It now stands near 20 percent for the Western Hemisphere members of APEC (Chile is somewhat higher), Australia and New Zealand. Japan's investment share remains near 30 percent of output, and the investment share for the rapidly growing members of APEC is well in the 30's (and as high as 40 percent of GDP in some cases).

All of the economies that experienced rapid growth underwent a period in which the investment share of GDP increased roughly ten percentage points or more. In Japan, this shift came in the 1950s. Korea, Chinese Taipei, Singapore, and Hong Kong followed in the 1960s. Malaysia,

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[57] These are from estimates prepared at the World Bank. See Nehru, Vikram and Asok Dhareshwar, "A New Database on Physical Capital Stock: Sources, Methodology, and Results," *Revista de Análisís Económico*, vol. 8, n. 1, 1993, pp. 37-59. There are 68 developing and 24 developed economies in the database.

[58] In this discussion, we do not distinguish between the growth rate in a steady-state and the growth rate during the convergence process. The positive relationship between investment and growth (albeit perhaps short-run growth during the convergence to a steady-state) is well documented in the empirical literature. See, for example, Barro and Sala-i-Martin, *Economic Growth*, 1995, *op. cit.*, p. 433; Ross Levine and David Renelt, "A Sensitivity Analysis of Cross-Economy Growth Regressions," *American Economic Review,* vol. 82, September 1992, pp. 942-963; N. Gregory Mankiw, David Romer, and David Weil, "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics*, 107, May 1992, pp. 407-437; and J. Bradford DeLong and

Thailand, Indonesia and the Philippines experienced a marked increase in the 1970s. Meanwhile, the 1980s saw a sharp rise in investment in Chile and again in Thailand.

Table 2: **Fixed gross investment in APEC economies as a share of nominal GDP**

Economy	**1992**	**1993**	**1994**	**1995***	**1996***
Canada	18.7	18.1	18.6	18.1	19.0
Chile	22.7	25.6	24.3	23.0	24.3
Mexico	20.8	20.4	20.3	17.4	17.9
United States	13.0	13.7	14.6	15.5	16.1
Australia	20.1	20.1	21.3	20.9	20.9
New Zealand	16.5	18.0	19.7	20.6	21.0
Papua New Guinea	23.8	18.8	20.0	23.9	21.5
Indonesia	25.8	27.5	28.1	29.5	29.9
Malaysia	34.5	35.5	38.5	40.0	39.9
Philippines	20.9	24.3	23.6	25.4	26.7
Singapore	35.7	35.7	34.4	34.8	34.9
Thailand	39.3	39.3	39.2	40.4	40.7
China	31.2	37.6	38.6	37.2	37.9
Hong Kong	27.4	27.3	29.0	30.5	30.8
Japan	30.4	29.5	28.7	28.1	28.4
Korea	36.6	36.0	35.9	37.5	37.4
Chinese Taipei	23.2	23.7	22.9	23.1	...
APEC	**22.1**	**23.6**	**24.3**	**24.6**	**25.3**

Source: International Monetary Fund. * Estimated/projected

The role of public policy

Numerous economies have had periods of rapid growth that ended quickly, typically when external borrowing opportunities were exhausted. Much of the success of APEC economies can be attributed to policies that avoid external borrowing constraints and promote long-term growth. Such

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Larry Summers, "Equipment Investment and Economic Growth," *Quarterly Journal of Economics*, vol. 106,

policies include prudent public investment in education and infrastructure, and solid, predictable macroeconomic management which leads to low rates of inflation and small fiscal deficits.[59]

Compared to other economies, investment in APEC market economies has been primarily undertaken by the private sector. Indeed, public sector investment as a share of GDP has been somewhat below that of other economies, while private sector investment has been considerably higher.[60] However, the state has not been completely absent from investment decisions, and has, in some economies, been fairly active.[61] Governments have a special role to play in the provision of basic infrastructure, in ensuring a transparent investment regime, and in promoting through innovative public-private partnerships.

Investment and infrastructure

Without adequate physical infrastructure, economic growth is impeded. The critical importance of sufficient infrastructure is reflected by ambitious investment plans throughout the APEC region. As noted above, the World Bank projects East Asian economies will spend between $1.2 trillion and $1.5 trillion for infrastructure over the next decade. This section examines the impact of infrastructure spending on productivity.

The economic return to infrastructure

The principal types of infrastructure include utilities (e.g., power, telecommunications, water processing projects, solid waste collection and disposal, and gas piping), general public works (roads, major dams, and canal works for irrigation and drainage), and transport sectors (airports, urban and interurban railways, general urban transport, and ports and waterways). The academic literature generally finds a strong association between public spending on these items and growth. Evidence from the United States, for example, shows that output increases of as

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May 1991, pp. 445-502.

[59] *Ibid.*, p. 27.

[60] World Bank, *The East Asian Miracle: Economic Growth and Public Policy*, 1993, *op. cit.*, pp. 41-43. Note, however, that problems of mutual causality pervade the analysis: investment may raise growth, but growth also raises investment.

[61] Singapore actively promoted new industries through state-owned companies that were later spun off to private sector ownership. At various times in their development, Japan, Korea, and other economies guided new capacity investments of individual firms through foreign exchange allocation. Development banks and state-owned enterprises were used to encourage investment in a number of APEC members. Even Hong Kong structured its land-use policies to influence investment decisions.

much as 20 to 40 percent are associated with a doubling of the public capital stock.[62] Given the relative sizes of output and the public capital stock, this range suggests that a $1 investment in public capital could raise annual output by roughly $0.30 to $0.70. A study of Japanese regions finds similar results: on average, output is 20 percent higher in regions with twice the public capital stock.[63]

The observed link between public investment and output does not, however, necessarily imply that public investment *causes* growth. For example, productivity gains may result in (rather than be caused by) greater infrastructure spending, both because of the additional infrastructure needs of a more productive economy and because a faster-growing economy has more resources at its disposal to invest.[64] Higher infrastructure spending and productivity may also be simultaneously affected by a third factor such as private investment. Conversely, both public infrastructure and productivity also affect private investment, so the causality runs both ways. Despite these caveats, the evidence generally supports the theory that investment in infrastructure enhances productivity.[65]

The linkage between public infrastructure spending and private investment is particularly interesting. Public capital enhances the productivity of private capital -- the return to investing in a factory is higher if the roads surrounding the factory are well-mainained, for example. This raises the return to private capital, and thus encourages higher private investment. But public investment may also act as a substitute for, and thus "crowd out," private investment. The crowding out need not be direct, such as a public project directly supplanting a private one. Rather, higher public investment can exert upward pressure on the cost of capital, and thus

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62 David Aschauer and Alicia Munnell are the leading proponents of a high return to public sector capital. See David Aschauer, "Is Public Expenditure Productive?" *Journal of Monetary Economics,* March 1989, pp. 177-200; and Alicia Munnell (with Leah Cook), "How Does Public Infrastructure Affect Regional Economic Performance?" *New England Economic Review* , September/October 1990, pp. 11-32. Also see the discussion in Alicia Munnell, "Policy Watch: Infrastructure Investment and Economic Growth," *Journal of Economic Perspectives*, vol. 6, n. 4, Fall 1992, pp. 189-198.

63Koichi Mera, "Regional Production Functions and Social Overhead Capital: An Analysis of the Japanese Case," *Regional and Urban Economics*, vol. 3, May 1973, pp. 157-85.

64 See discussion in Douglas Hotz-Eakin, "Public Sector Capital and the Productivity Puzzle," *Review of Economics and Statistics*, vol. 76, n. 1, February 1994, pp. 12-21.

65 See Munnell, "Policy Watch: Infrastructure Investment and Economic Growth," *Journal of Economic Perspectives,* 1992*, op. cit.*, and Charles Hulten and Robert Schwab, "Infrastructure Spending: Where Do We Go From Here?" *National Tax Journal,* vol. XLVI, No. 3.

indirectly crowd out private investment. On net, however, the evidence suggests that public investment appears to stimulate private investment.[66]

Making investments in infrastructure efficient

Not all investments in infrastructure have the same payoff. Infrastructure projects can be evaluated both in terms of their specific sector-driven goals (i.e., increased flight capacity for a metropolitan region), and in terms of broader economic goals (i.e., spurring growth in the regional economy, providing capacity for synergy and expansion of economic activities, leading to spill-over effects on human capital and complementary infrastructure development).[67] Large-scale infrastructure development projects may exhibit inefficiencies when evaluated on either of the above criteria -- targeted purpose or overall economic effect. The potential for improved performance provides incentives for providers, users, and other relevant actors. By examining commercial management, competitive markets, and stakeholder involvement, the World Bank documents how different market structures create varying incentives and outcomes.[68]

The commercial management approach conceives of infrastructure provision as a service industry activity that responds flexibly to consumer demand.[69] Many economies, particularly in earlier stages of development, administer large-scale infrastructure projects through potentially inefficient state-owned enterprises. Moreover, efforts to subsidize these enterprises serve to further remove infrastructure projects from competitive pressures, and raise the drain on scarce resources that may have more efficient uses in education or health.[70]

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66 See, for example, Munnell (with Cook), "How Does Public Infrastructure Affect Regional Economic Performance?" *New England Economic Review*, 1990, *op. cit.*, pp. 11-32.

67 This latter set of criteria can be understood as including the often large and potentially negative environmental impact of a public works project.

68 World Bank, *World Development Report 1994: Infrastructure for Development*, 1994, *op. cit.*, pp.2-3. While these strategies can all affect the incentives of players connected to infrastructure projects, their specific degree of effectiveness and appropriateness may depend on macroeconomic stability, overarching legal and political institutions, and the discrete characteristics of the project (for example, whether agency problems are complicated by performance indications that are only completely apparent over the course of many years).

69 Infrastructure projects often provide a service for which demand is relatively inelastic -- even relatively poor populations still exhibit tremendous needs for infrastructure.

70 The World Bank estimates that diverting state-owned enterprise operating subsidies to basic education would increase education expenditures by 50 percent in Mexico, 74 percent in Tanzania, 160 percent in Tunisia, and 550 percent in India. *Bureaucrats in Business* (Washington, DC: World Bank, 1995).

The introduction of competition in the provision of infrastructure, even within the public sector, can impose financial discipline and improve customer satisfaction. Direct competition can be promoted by liberalizing entry into activities that have no specific technological barriers and freeing up prices. Economies can also promote indirect competition, through competitive bidding for the right to provide exclusive service where a natural monopoly condition exists. The supply of substitute services can be liberalized as well. Often liberalization must occur hand-in-hand with regulation in order to prevent incumbents from gaining unfair advantages. A classic example is the telecommunication industry in the US. By prohibiting AT&T from operating in local markets, the US government provided the preconditions for competition in long-distance markets; consumers benefitted as competitors entered the market and prices fell.

Economies can also enhance accountability and efficiency by giving users and other stakeholders to have a voice in the planning, regulation, and overall supervision of the project. Involvement of users provides a built-in incentive system to provide a high-quality, low-cost service. Giving employees and administrators a stake in the company provides a further incentive to perform well. Users and other stakeholders provide a valuable source of information and discipline when represented in the process of planning and administering an infrastructure process.

The role of government in infrastructure investment

Governments can play a useful, although not necessarily direct, role in large-scale infrastructure projects. Empirical studies indicate that infrastructure projects are most effective in meeting their goals when they are supported by a government-sponsored legal and regulatory framework that integrates public concerns with private involvement in the provision of infrastructure services.[71] A legal framework which protects property rights and establishes bankruptcy laws protects private investment in the infrastructure project and promotes an efficient allocation of capital. An efficient regulatory framework can promote a competitive market in the provision of infrastructure. Government-sponsored planning integrates the concerns of stakeholders and addresses long-term sustainability issues.

However, direct government involvement in infrastructure projects is not automatically beneficial. Governments need to act more as a coordinator, catalyst, and protector of the public interest -- especially in helping ensure access for poorer populations -- and less often as direct operators.[72] Many of the shortcomings that plague large-scale infrastructure projects result from a lack of sufficient competition, private-sector participation, or stakeholder involvement. Furthermore, frequent fiscal constraints on the public sector hinders public provisioning of infrastructure.[73]

Public sector involvement in infrastructure should be geared towards promoting efficiency and equity. Improving efficiency requires establishing a commercial or quasi-commercial framework, integrating users and stakeholders into the planning and regulation of the project, and casting the role of government appropriately as an innovative arbiter, information provider, and regulator. By ensuring that poorer and more remote populations are also served by infrastructure projects, governments can also promote equity.

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[71] Elinor Ostrom, Larry Schroeder, and Susan Wynne, *Institutional Incentives and Sustainable Development: Infrastructure Policies in Perspective* (Oxford: Westview Press, 1993).

[72] Tschangho Kim and Jong-Gie Kim, "Issues in Building a National Transportation Development Model: Experience from a Korean Application," *Annals of Regional Science*, vol. 19, n. 1, 1985, pp. 18-36.

[73] A robust framework for economic and technical cooperation spurs such government innovation substantially, and may provide benefits for participating economies. See section 2.6 of this outlook, *supra*, on economic and technical cooperation, *supra*. The Economic Committee's *Report on the State of Economic and Technical Cooperation in APEC*, to be presented in conjunction with this Outlook, reviews the state of initiatives within the APEC region to share valuable information on public and private sector best practices regarding infrastructure development.

Financing investment

Mobilizing domestic saving

Despite the increasingly integrated nature of global capital market, financing investment still depends critically on the mobilization of domestic saving. Both in the developed economies and developing economies, investment is primarily financed by domestic saving rather than foreign financing.[74] It was thus the ability to mobilize domestic saving that made rapid investment and growth possible in the APEC region. The growth of domestic saving was facilitated in part by demographic transitions in several economies (for example, families with fewer dependents to support were able to raise saving). Positive real interest rates -- which meant that financial asset holdings preserved their real value -- boosted domestic saving.[75] The maintenance of inflation at relatively low levels in most APEC economies encouraged monetary and financial asset holdings, especially when interest rates were capped or controlled. As a result, many of the developing economies in the region saw substantial financial deepening -- an increase in the importance of monetary assets relative to GDP. For example, the ratio of money and quasi-money to output in Indonesia rose by a factor of 5 between 1970 and 1992, and by a factor of 3 in Thailand. Whether or not compulsory saving regimes raised saving is somewhat more controversial.

Fiscal policy was also important in mobilizing saving in the APEC region. Budget deficits absorb a substantial fraction of domestic saving that either could have been used to fund domestic investment or to reduce foreign net borrowing. Budget deficits within the APEC economies have generally been small, and Singapore, Thailand, and Chinese Taipei have run government budget surpluses for much of the period, adding to the supply of domestic savings. In the past few years,

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[74] On the close association of domestic saving with domestic investment, see Martin Feldstein and Charles Horioka, "Domestic Savings and International Capital Flows," *Economic Journal*, vol. 90, n. 358, June 1980.

[75] In theory, the effect of higher real interest rates on saving is ambiguous. A higher real interest rate raises the return to saving (the substitution effect), boosting the saving rate. But a higher real interest rate also raises the permanent income of savers (the income effect), raising consumption and reducing the saving rate. Empirical studies generally conclude that the elasticity of saving with respect to the real interest rate is positive but relatively small. See, for example, D.N. Baum, "Consumption, Wealth, and the Real Interest Rate: A Reexamination," *Journal of Macroeconomics*, vol. 10, Winter 1988, pp. 83-102; Barry Bosworth, *Tax Incentives and Economic Growth* (Washington: Brookings Institution, 1984); Patricia Hendershott and Joe Peek, "Private Saving in the United States: 1950-85," *NBER Working Paper No. 2294* (Cambridge, MA: National Bureau of Economic Research, June 1987); and A Las Bovenberg, "Tax Policy and National Saving: A Survey," in Yusuke Horiguchi, *The United States Economy: Performance and Issues* (Washington: International Monetary Fund, 1992), pp. 52-76. Michael Boskin has found significantly larger effects. See Michael Boskin, "Taxation, Saving, and the Real Interest Rate," *Journal of Political Economy*, vol. 86, April 1978, pp. S3-S27.

most APEC economies have been successful in reducing budget deficits. The APEC-wide central government budget deficit fell from 2.7 percent of GDP in 1992 to an estimated 1.8 percent in 1995.

Saving behavior may also be affected by an nation's degree of income inequality. Some theories of individuals' consumption behavior suggest that, other factors being equal, societies with greater income inequality tend to have higher rates of private saving, by concentrating a greater proportion of income among those with higher propensities to save.[76] Most high-performing Asian economies have experienced reductions in their rates of income inequality over the course of their recent development,[77] which, according to some, should reduce the saving rate. However, a growing body of literature documents the interrelationship between lower income inequality and economic growth. High savings rates coupled with diminishing levels of income inequality support the idea that the direction of causality in the income equality/economic growth relationship run in both directions.[78]

The role of foreign investment

External financing has played an intermittent but generally subordinate role in financing the investment of APEC economies over the postwar period -- even for those economies that grew most rapidly. Economies that relied relatively heavily on foreign finance include Chile (1971-86), Korea (1967-75), Malaysia (1981-84), Mexico (1991-94), New Zealand (1974-87), Philippines (1975-84), and Thailand (1972-82). In several instances (Chile, Mexico, Philippines) dependence on foreign financing was interrupted by a foreign exchange crisis and subsequent period of adjustment. A frequent pattern among the fastest growing economies is an initial period of foreign financing, followed by a marked reduction in the current account deficit relative to domestic investment. Several of the fastest growing economies (Japan, Singapore, Chinese Taipei) became net capital exporters by the end of the period.

Although APEC members were not immune to the debt crisis of the 1980s, most members were relatively unaffected by the associated interruption of commercial bank lending, and were well

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76 James N. Morgan and F. Thomas Juster, "The Determinants of Household Saving Behavior," In Dimitri B. Papadimetriou, *Aspects of Distribution of Wealth and Income* (New York: St. Martin's Press, 1994). One of the subtle aspects of this debate is the distinction between average and marginal propensities to save: higher-income individuals have higher average propensities to save, but may not have higher marginal propensities to save (at least out of permanent income) relative to lower-income individuals.

77 Asian Development Bank, *Asian Development Outlook 1996* (Manila: Asian Development Bank, 1996).

situated to take advantage of the growth of portfolio and direct investment that followed in the late 1980s and 1990s.[79] This was one of the reasons why APEC was able to increase its rate of investment during the 1980s.

Although it has generally played as dominant a role as domestic saving, foreign investment still plays a critical role in stimulating growth, especially during the 'take-off' phase. For economies entering periods of rapid development, investment requirements can reach levels that outstrip capital available through domestic savings, thus requiring net capital inflows to maintain investments. Promoting investment linkages among APEC member economies could be tremendously helpful in this regard. Nonetheless, large net capital inflows can create challenges, such as financial instability, for macroeconomic policy. A failure to adequately address these challenges with appropriate monetary, fiscal, and exchange rate policies could heighten inflationary pressures and raise the risk of financial instability.

Foreign investment has also played an essential (though not universal) role in capital formation and technological diffusion within the APEC region. The APEC economies differ greatly in historical openness to foreign direct investment, and in the role that foreign ownership plays in the domestic capital stock. In several of the APEC economies -- Australia, Malaysia, Hong Kong, and Singapore -- foreign direct investment makes up a significant share of investment flows and the domestic capital stock. Between 1986 and 1991, for example, foreign direct investment flows represented 9.5 percent of gross domestic capital formation in Australia, 9.7 percent in Malaysia, 12.1 percent in Hong Kong, and an astonishing 29.4 percent in Singapore.[80] In many cases, indigenous supplying firms have proliferated due to foreign investment.

In other economies -- Japan, Korea, and, until recently, China -- foreign direct investment has been relatively small, and foreign ownership accounts for an insignificant part of domestic productive capacity. As a result, the direct channel of technology transmission through inward foreign direct investment is limited. In the absence of inward investment, these economies often

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[78] See World Bank, *The East Asian Miracle: Economic Growth and Public Policy*, 1993, *op. cit.*, pp. 29-32.

[79] The resilience of many APEC member economies in the face of substantial reductions in commercial bank lending during the 1980's may owe partly to their high saving rates, making it easier for these economies to finance investment through domestic saving.

[80] "FDI and Market Framework Policies: Reducing Frictions in APEC Policies on Competition and Intellectual Property," APEC 96/EC1, 6.1/WP15/EC/Feb9-10, Table 1, page 8.

develop efforts to encourage the inflow of foreign technology, through licensing, research and development budgets focused on technology identification and adaptation, and recently, outward foreign investment in technology-intensive industries.

Nonetheless, for most economies, foreign direct investment remains a key source of capital and technology.[81] In order to induce sufficient flows of inward foreign direct investment, and thus to boost growth, a liberal trade and investment regime is essential.[82] A foreign direct investment regime along these lines would help to spur continued physical capital investment in the Asia-Pacific region.

Maximizing the benefits of investment

Merely raising the domestic rate of investment is not sufficient to ensure rapid economic growth. If it were, the economies of Eastern Europe and the former Soviet Union would have been growth standouts throughout the postwar era. Rather, capital resources must be deployed to areas in which they will earn a high rate of return to effect rapid and sustained economic growth. One of the distinctive features of Chart 1 above is that the APEC economies achieved a relatively large increase in output for the capital investments undertaken. This may reflect the growth of other inputs, as well as total factor productivity growth.[83] However, it is more likely to reflect the higher quality of the region's investment.

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81 See APEC Economic Committee, 1995 APEC Economic Outlook, 1995, *op. cit.* for a discussion of the effects of foreign direct investment flows.

82 International negotiations on foreign investment rules are ongoing. Two prominent examples include APEC's nonbinding investment principles and the Multilateral Agreement on Investment (MAI), which is at least temporarily being developed under the guidance of the Organization for Economic Cooperation and Development (OECD). Best-practice principles in investment include full national and most-favored-economy treatment for foreign transplants, freedom from performance requirements (such as the requirement that a foreign subsidiary's products contain at least some specified minimum local content), guaranteed access to binding international arbitration of disputes between private investors and national governments, and the right to unrestricted investment-related transfers across borders.

83 Although population growth rates for much of APEC were not high by comparison with other developing economies (and several APEC economies went through demographic transitions that reduced population growth, in some cases aided by forceful state policies), formal employment growth -- particularly in manufacturing -- was often very rapid in the initial stages of development. In addition, as the section on labor force discussed, many of the APEC economies were successful in expanding the stock of human capital through primary and secondary education. Recent research has continued to reinforced the importance of human capital measures in estimating aggregate production functions and the sources of growth; this factor has contributed greatly to economic growth among many of the APEC economies. Barro and Sala-i-Martin, *Economic Growth,* 1995, *op. cit.*, pp. 431-433; and Vikram Nehru and Ashok Dhareshwar, "New Estimates of Total Factor Productivity Growth for Developing and Industrial Economies" *World Bank Policy Research Working Paper #1313* (June 1994).

The importance of the quality -- not just quantity -- of investment has been noted by several studies. For example, a recent study by the McKinsey Global Institute examined productivity and investment quality in specific sectors of the economy, including automotive production, processed food, general merchandise retailing, telecommunications, and utilities. The research indicates that investment quality can offset lower savings rates in achieving greater productivity and growth. In the United States, a flexible capital market and strong competitive pressures produce a plethora of innovative retail formats and lean management. The lesson is that the productivity of physical capital depends on many factors, including sufficient savings, market environment, and flexibility of capital. High levels of investment are necessary but not sufficient to achieve high productivity.[84]

[84] *Capital Productivity*. (Washington, DC: McKinsey Global Institute, 1996).

3. Total Factor Productivity

The portion of economic growth that cannot be accounted for by increases in labor (including human capital) and physical capital is referred to as "total factor productivity." Empirical studies find that such total factor productivity growth can account for over half of total economic growth.[85] Over the years, economists have re-examined both the *magnitude* of measurements of total factor productivity and its *sources.*

Measurement issues

There are two problems in measuring total factor productivity: measuring overall output growth, and measuring the contribution of factor input growth. There are important measurement problems for both. For example, it is widely recognized that there are problems of measuring productivity in the service sector and within government. Indeed, government output within the GDP accounts is typically measured by its inputs, so that by definition, there is no productivity growth within the public sector. Yet micro-studies of the public sector show significant productivity increases in certain areas. In addition, in many economies, the official data also show little increase in productivity in the financial service sector over the past two decades. But a casual look at that sector would suggest to many observers that this sector has seen marked improvements -- and not all of it accounted for by increased purchases of computers. The range of services it provides has increased enormously and the convenience with which it provides those services has been greatly enhanced.

The challenges of constructing an unbiased price index highlight the difficulties of accurate measurement. In the United States, for example, there is a concern that inadequate adjustments have been made in the consumer price index for quality adjustments, new products, and the new ways (outlets) through which goods are distributed.[86] Inadequacies in the measurement of the price level

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85 See, for example, Robert Solow, "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics,* vol. 39, August 1957, pp. 312-320; Edward Denison, *Accounting for United States Economic Growth, 1929-1969* (Washington: The Brookings Institution, 1974), and Jong-Il Kim and Lawrence J. Lau, "The Sources of Economic Growth of the East Asian Newly Industrialized Economies," *Journal of the Japanese and International Economies*, vol. 8, 1994, pp. 235-271.

86 See Advisory Commission to Study the Consumer Price Index, Senate Finance Committee, "Toward a More Accurate Measure of the Cost of Living," September 15, 1995; and Matthew Shapiro and David Wilcox, "Mismeasurement in the Consumer Price Index: An Evaluation," Federal Reserve Board, April 25, 1996.

affect measurements of real output. Typically, measures of nominal output are reliable (measures of nominal public sector output may be an exception). The growth rate of nominal output is simply the growth rate of real output plus the rate of increase in the price level; if the latter is overestimated, the former is therefore underestimated. If the bias were constant, it would make little difference. But the problem is that the bias may differ markedly across economies and over time. The bias is correlated with the combined size of public and service sectors (assuming that the biases are greater in those sectors) and increases with the pace of quality improvement, the rate at which new products are introduced, and changes in distribution channels.

The second problem in deriving an accurate measure of total factor productivity comes in the measurement of inputs of labor and capital, and their contributions to economic growth. There is a long controversy about the appropriate way to measure capital; different ways of measuring it can generate markedly different estimates of the rate of growth of factor inputs, and thus of total factor productivity.[87] The fundamental problem is how to adjust capital for changes in quality. Some such adjustments would attribute to increases in capital all technological change which is embodied in new machines, leaving only "disembodied" technological change as part of total factor productivity. Other problems arise in assessing the contribution of factor input growth to overall growth. To assess contributions to output, one multiplies the rate of growth of output by its share in output, because the share of output is assumed to reflect its marginal product. But this assumes fully competitive pricing, with constant returns to scale. In many cases, especially where government is involved in setting wages, the competitive pricing assumption is inaccurate.[88]

[87] Early studies -- such as the ones by Solow and Denison noted above -- tended to find relatively large total factor productivity residuals. But subsequent analysis contended that a substantial fraction of the residual could be explained by changes in the quality of inputs. See Dale Jorgensen and Zvi Griliches, "The Explanation of Productivity Change," *Review of Economics and Statistics*, vol. 34, July 1967, pp. 249-280; and Chris Dougherty and Dale Jorgensen, "International Comparisons of the Sources of Economic Growth," *American Economic Review*, vol. 86, May 1996, pp. 25-29.

[88] There are analytic problems which arise when there is imperfect competition or when the aggregate production function does not exhibit constant returns to scale. (With constant returns to scale, if all factors are paid their marginal product, output is just exhausted; with increasing returns, output is more than exhausted.) The growth accounting exercise becomes especially problematic when there is endogenous growth, that is, R and D is produced, since typically, if there is constant returns to scale with a given technology, there will be increasing returns to scale with produced technology. Further problems are presented by the public sector, both in analyzing the incidence of taxes and benefits.

The debate over the East Asian miracle

Many of the problems with deriving total factor productivity are crystallized through the ongoing debate over the sources of growth in Asia. It is commonly believed that the "East Asian miracle" has been characterized by rapid productivity growth. According to some estimates, a large share of Asia's extraordinary growth cannot be attributed to increases in physical and human capital, and must therefore represent total factor productivity growth.[89] Recent analyses, however, question this conclusion, claiming that a simple look at the numbers belies the hypotheses of spectacular total factor productivity growth.[90]

Revisionists contend that total factor productivity -- and thus the "miracle" -- disappears once one accurately measures the remarkable growth of inputs targeting the factors already present in the growth accounting equation. The East Asian economies successfully mobilized a large amounts of resources, and according to this argument, their growth is merely an expected by-product of that accumulation. Rapid physical capital accumulation and human capital accumulation, the revisionists argue, fully explain GDP growth. As noted in the labor section above, between 1966 and 1990, the employed share of the population increased from 38 to 49 percent in Hong Kong, from 27 to 36 percent in South Korea, from 28 to 37 percent in Chinese Taipei, and from 27 to an astounding 51 percent in Singapore. During the same time period, educational achievement soared: the percentage of the population attaining at least a secondary school education increased from 27 to 71 percent in Hong Kong, from 27 to 75 percent in South Korea, from 26 to 68 percent in Chinese Taipei, and from 16 to 66 percent in Singapore.[91] And with the single exception of Hong Kong, the investment-GDP ratio also increased dramatically in these economies.[92]

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89 The World Bank estimates that total factor productivity contributed one-third of total economic growth in Asia over the past three decades. World Bank, *The East Asian Miracle: Economic Growth and Public Policy,* 1993, *op. cit.*, pp. 46-60.

90 Young, Alwyn, "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience,*" National Bureau of Economic Research Working Paper No. 4680* (March 1994, p. 33); Krugman, Paul, The Myth of Asia's Miracle, Foreign Affairs, vol. 73, n. 6, November-December 1994, pp. 62-78.

91 Young, "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience," *National Bureau of Economic Research Working Paper No. 4680* (1994), *op. cit.*, p. 3.

92 *Ibid*., p. 2.

This revisionist view is itself subject to many criticisms.[93] For example, the nature of growth accounting in these studies may give too much weight to capital accumulation. [94] If new technology is embodied in purchased capital, it is likely to be counted as a capital input in the growth model -- but in reality represents technological progress for the economy.[95] The common comparison to the Soviet Union's growth in the 1950s is also imperfect. Saving rates in East Asia have been quite high, and there has been a massive buildup of physical capital, much like in Soviet Union. But the similarities end there. The investments financed with high savings rates in the Soviet Union were largely directed by governments,[96] and resulted primarily in a high capital-output ratio, which is not the case in East Asia. The "miracle" in East Asia may thus have resulted from a high savings rate interacting with high levels of capital accumulation in a stable, market-oriented environment, which was conducive to technology transfer.

The debate over the nature of growth in East Asia underscores two points. First, measurement problems and data limitations make it difficult to calculate total factor productivity precisely. Second, the "miracle" may reflect that the East Asian economies were able to achieve astonishingly high savings rates, and were able to invest those savings prudently, rather than somehow enjoying a total factor productivity "miracle." The East Asian experience highlights the crucial importance of high overall investment rates and prudent investment strategies in ensuring sustainable growth.

Once some estimate of total factor productivity is obtained (preferably in a manner that minimizes the potential problems delineated above), it can be further decomposed. Productivity can increase from:

(i) productivity improvements that result from improved engineering, and other forms of research and development;

(ii) resource reallocation across sectors, from less productive to more productive sectors; and

(iii) economic expansion, if there are increasing returns to scale.

Even after accounting for these factors, there may be some remaining unexplained improvements in productivity.

The role of technology

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93 Jorgenson and Griliches (1967) found that when capital accumulation is properly measured, the residual disappears in the United States. Despite this statistical finding, few would lend much credibility to the interpretation that there had been no technological progress in the U.S.

94 Sarel, Michael, "Demographic Dynamics and the Empirics of Economic Growth*," International Monetary Fund Staff Papers,* vol. 42, n. 2, June 1995, pp. 8-9.

95 Stiglitz, 1995.

96 *Ibid.,* p. 3.

Technological progress is a key to long-run economic growth. Technology embodies new processes, products, and even industries -- allowing production to occur more with fewer resources, thus raising living standards. The importance of technological progress in long-run growth is well established.[97]

While market-oriented research and development is usually -- and should be -- primarily a private-sector activity, the government does have a special role because *technological innovations have significant spill-overs.* Research results can not only be imitated cheaply, but may also be applied to areas not imagined by the original researcher. Spill-over effects within economies can be substantial.[98] Cross-border spill-overs are also significant, and are not limited to developed economies. Developing economies also benefit. Each $100 increase in U.S. or Japanese R&D is associated with a $25 increase in total GDP for 77 developing economies.[99] Nonetheless, technology transfer between economic jurisdictions, and especially to developing economies, is likely to be imperfect. Institutions may help surmount these imperfections and spur the technology transfer process.[100]

The role of public policy

East Asian economies were able to close the technological gap rapidly through enormous investments in human capital, a willingness to allow foreign investment, the creation of economic conditions conducive to foreign investment, and adopting technologically advanced techniques and equipment.[101] Technology will be useless without highly-skilled and educated workers who can use

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97 Solow, "Technical Change and the Aggregate Production Function." *Review of Economics and Statistics*, 1957, *op. cit.*, pp. 312-320. In this early growth model, technological progress was simply the residual itself -- growth that could not be explained by human and physical capital accumulation alone was assumed to result from technological progress. Growth modeling has become more sophisticated as researchers tried to disaggregate the residual and statistically account for the likelihood that technological progress itself could be influenced by growth.

98 Council of Economic Advisers, *Economic Report of the President 1995* (Washington: U.S. Government Printing Office, 1995).

99 Coe, David, Elhanan Helpman, and Alexander Hoffmaister. "North-South R&D Spillovers," *NBER Working Paper No. 5048* (March 1995).

100 The sections of this outlook, *supra*, which focus on standards harmonization and on economic and technical cooperation explore some of the mechanisms through which institutions can affect technology transfer.

101 Stiglitz, 1995. p. 4

it and modify it as necessary for local conditions. Foreign investments can speed technology adoption and diffusion.

The protection of intellectual property rights is also crucial to long-run technological development. In relatively high-technology industries (such as chemicals, pharmaceuticals, machinery, and electrical equipment), a system of intellectual property protection has a significant effect on the amount and kinds of technology transfer and direct investment to that economy.[102] When a variety of relevant factors are held constant in econometric models, the protection of property rights has a substantial and statistically significant effect on U.S. foreign direct investment.[103] While it may seem attractive to contravene intellectual property rights in producing already-invented products or processes, such behavior is thus myopic: By discouraging additional investment, this policy tremendously hampers future technological progress. [104] *When intellectual property rights are disregarded, a small gain today is often exchanged for a large loss tomorrow*.

Reallocation of resources

Shifts in resources across sectors with different productivity levels can affect overall productivity: Moving more resources into higher productivity areas will raise average productivity. For example, the transformation from agricultural to industrialized economies -- throughout the nineteenth and early twentieth centuries in the United States and other industrialized economies, and in the years following World War II in the newly industrialized economies -- has been accompanied by an increase in aggregate productivity. Denison attributes 11 percent of the overall growth in the United States between 1929 and 1969 to improved resource allocation, such as shifts from agriculture to industry.[105]

Today, a major source of productivity gain from resource reallocation is the expansion of trade, allowing different economies to take advantage of their comparative advantage. In the United States, jobs in the manufacture for export sector pay 13 to 15 percent more than the average job,

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[102] *Ibid.*, p. 1.

[103] *Ibid.*, p. 1.

[104] Edwin Mansfield, "Intellectual Property Protection, Direct Investment, and Technology Transfer: Germany, Japan, and the United States." International Finance Corporation Discussion Paper 27, 1995.

[105] Denison, *Accounting for United States Economic Growth 1929-1969*, 1974, *op. cit.*, p. 111, Table 8-2.

reflecting higher productivity in the merchandise export sector.[106] The ability to shift more resources into areas of comparative advantage, and thus to boost output and productivity, underscores one of the most important goals of the APEC community: free trade by 2020. Liberal trade and investment regimes and competition policies play an important role in reallocating resources to their most productive uses -- and thus raising living standards.

Returns to scale

Centuries ago, Adam Smith emphasized the returns to productivity that accrued from specialization and suggested that the extent of specialization is limited by the size of the market. Many believe that the early growth of the U.S. economy was enhanced by its ability to create a large national market.[107] There is also widespread agreement that creating a large APEC market, within which goods and services flow freely, can similarly serve as a boon to growth for the economies of this region.. The larger the market (and therefore the expected payoff), the greater the incentive to make investments in research and development. As the market has expanded over the last two centuries, research and development has played a much more prominent role in the production process.

Economies of scale and the growth accounting framework

Within the growth accounting framework, which focuses on a given market, the magnitude of returns to scale at the aggregate level remains a source of some debate within the economics profession. The existence of some returns to scale at the industry and local level is evident from the existence of large firms and large cities; more generally, cities are a reflection of agglomeration economies. Still, most large economies consist of many metropolitan areas, suggesting that much if not all of the agglomeration economies are exhausted; and most industries consist of more than one

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[106]Department of Commerce, "U.S. Jobs Supported by Goods and Services Exports, 1983-1992," May 1995; and Richardson, J. David, and Rindal, Karen, *Why Exports Matter: More!* (Washington: Institute for International Economics, 1996). A large difference remains even after one accounts for differences in characteristics of workers and plants in the different sectors.

[107]North, Douglass C., and Rutten, Andrew, "The Northwest Ordinance in Historical Perspective," in Klingaman, D., and Vedder, R., eds., *Essays on the Old Northwest* (Athens: Ohio University Press, 1987).

firm, suggesting that the economies of scale are balanced by the diseconomies. Growth accounting approaches that focus on national economies therefore typically assume constant returns to scale.[108]

[108] One instance in which the size of the market cannot be ignored is assessing productivity growth in Hong Kong: the rapid expansion of China, especially Guandong province, has enormously enhanced Hong Kong's economic opportunities. This is reflected in Hong Kong's apparently high residual.

4. Role of the economic framework

This section explores structures and policies -- including market structures, trade and investment policy, government efficiency, and standards harmonization -- that define the overall economic framework within which firms and individuals operate. By facilitating a reallocation of resources toward their most productive uses structural policies affect total factor productivity (the growth residual) as well as the other components of growth.

Trade and foreign direct investment policy

Open, competitive trade and foreign investment policies promote the economic welfare of economies in at least five ways, most of which operate through the price system. First, they allow each trading economy to devote more of its resources to producing those goods and services that it can produce most efficiently (the benefits of comparative advantage). Second, trade expands the relevant size of the market -- allowing producers to take advantage of economies of scale. Third, exposure to the challenges of the international marketplace strengthens competitive pressures in the domestic economy, stimulating efficiency and growth. As the number of both actual and potential competitors in the domestic market increases, domestic producers face increased incentives to innovate and become more competitive; consumers, both at home and abroad, reap the benefits. Fourth, access to international markets stimulates the flow of information across borders. Domestic firms engaged in international competition assimilate new ideas about production methods, product design, organizational structure, and marketing strategy, allowing them to employ their resources more efficiently. Finally, trade expands the menu of goods and services available to both producers and consumers. Firms gain access to a wider variety of inputs, and consumers get to choose from a broader assortment of final goods and services. By increasing competitive forces and expanding the choices available to all, trade boosts efficiency and improves living standards. *Open trade and investment policies raise growth. Outward- looking policies facilitate the reallocation of resources to more productive uses, and thus raise total factor productivity.*

The shifting of resources into more productive uses may involve temporary adjustment costs, as discussed in the box below. But these short-run costs do not provide a convincing justification for protectionism. In almost all cases, protectionism merely shifts resources between sectors, while reducing overall efficiency. Protecting specific sectors inevitably distorts market signals and

imposes higher costs on other industries and on domestic consumers. For example, extending protection to the microchip industry imposes a cost on computer manufacturers, who pay more for chips, and on consumers, who pay more for a new computer than they would if chips were available at the lower world price. Because the impact of the restriction is indirect and spread over a large number of consumers, the total cost may be difficult to discern. But it is nevertheless real, and it is likely to grow over time. By raising the relative price of the protected sectors' output, and thus drawing capital and labor into those sectors and away from others, protectionist policies prevent the most efficient long-run use of an economy's resources. These distortions may be particularly harmful when restrictions are imposed on inputs used by industries that are characterized by economies of scale in production.

In addition, protectionist policies may often engender retaliatory actions. The costs of a tit-for-tat escalation are so high that in the long run all economies are likely to lose from the adoption of restrictive policies. The experience of the 1930s provides a grim demonstration: the major industrial economies responded to the onset of the Great Depression by raising trade barriers against each other, which provoked retaliation in kind and succeeded only in weakening their economies still further. A better strategy is for all to strive for a regime of open and fair competition, rather than to focus on any possible (and in any case usually illusory) short-term gains from protection.

The evidence on open trade and investment

Trade and foreign direct investment affect growth through various channels, but the cause-and-effect relationship is difficult to establish in practice: Even if expanded trade and investment are statistically associated with growth in income, does the expansion in trade and foreign investment *cause* the expansion in income, or vice versa? There can be no definitive answer, but careful studies conclude that trade and investment liberalization facilitates the flow of ideas and technology across borders, bolsters competitive pressures and, thus, enhances growth.

A recent economic analysis, which controlled for other national characteristics such as education, starting income, and political instability, found that the open economies in a sample of 79 economies grew by an average of 2.5 percentage points more per year (over a 20-year period) than

did the closed economies.[109] A comprehensive study of productivity across manufacturing industries in Germany, Japan, and the United States recently concluded that trade restrictions generally hurt productivity by reducing competitive pressures.[110] Other studies have found that protection of industries that produce intermediate inputs reduces growth. For example, one recent study found that, across a sample of over 70 economies, a 10-percentage-point increase in the tariff on capital goods and intermediate products was associated with a decline in real growth of gross domestic product (GDP) per capita of 0.2 percentage point per year.[111]

Market structure policy

Competition policy and related regulatory issues are increasingly important components of international trade relations. These issues will also play an important role in the further economic integration of the APEC region, and in the growth and development of each of its member economies.

From a domestic welfare standpoint, the benefits of competition are well-established and the static costs of monopoly power well-documented.[112] Theory and history (in the APEC region and elsewhere) demonstrates the dynamism sparked by competitive markets. Although the intellectual debate still continues over the importance of industrial in the East Asian economies, it is clear that the economies that the most successful encouraged strong competition among domestic firms. In *The East Asian Miracle*, the World Bank gives a high weight to the importance of "market contests" that were created the accessing foreign exchange or technology licenses, or for undertaking further capacity expansion.[113] Those economies that closed industries to foreign competition without assuring domestic competition were often saddled with inefficient firms that never outgrew their need for protection.

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[109] Jeffrey Sachs and Andrew Warner, "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity* (Washington: Brookings, 1995).

[110] McKinsey Global Institute, "Manufacturing Productivity," October 1993.

[111] Barro and Sala-I-Martin, *Economic Growth,* 1995, *op. cit*.

[112] Joseph Stiglitz, *Economics* (New York: WW Norton, 1993), pp. 447-452.

[113] World Bank, *East Asian Miracle: Economic Growth and Public Policy*, 1993, *op. cit.*

As a result, governments in all regions of the world are recognizing the importance of competition as a guiding principle for their national economies. Accordingly, many economies have enacted and begun to enforce competition laws; nearly 60 economies -- and many of the APEC region -- now have such laws. Competition laws prohibit anticompetitive behavior by private firms and, often, by state enterprises as well. Vigorous enforcement of antitrust laws protects a competitive market structure, which in turn stimulates innovation, promotes prosperity, and contributes to the international success of firms that operate in competitive domestic markets. The development of effective competition policies ensures that the gains of trade liberalization are fully realized, and that private anticompetitive conduct does not take the place of governmental policies in restraining foreign (and often domestic) energy into markets. Viewed from the consumer's perspective, sound competition law enforcement helps to ensure access to the highest quality goods at the lowest prices, with the most choices.

Competition law and policy has become an important topic for discussion at the OECD, and competition working groups have been established as part of other regional economic integration efforts. National competition officials meet to discuss substantive legal and economic issues relating to competition law and policy, practical problems in enforcing competition laws, and ways of enhancing cooperation among national competition agencies. A section below considers the role of economic and technical cooperation across economies in devising and implementing competition policies.

The role of market structure policies in boosting growth

The fundamental objective of market structure policies is to raise consumer welfare by balancing the potential costs of monopoly power against the potential benefits from economies of scale and scope.[114] Market structure policies are crucial because *effective competition policies can raise growth and living standards by reallocating resources to their most productive uses*. But as will be discussed in a box below, the reallocation of resources almost inevitably involves temporary adjustment costs. These short-term costs are often necessary in order to obtain the long-term benefits of higher productivity and efficiency.

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[114] The literature on antitrust economics is extensive. For an introduction, see Terry Calvani and John Siegfried, *Economic Analysis and Antitrust Law* (Boston: Little Brown and Co., 1988), and Robert Bork, *The Antitrust Paradox: A Policy at War with Itself* (New York: The Free Press, 1993).

Market structure policies are becoming increasingly international and intertwined with trade policies in general. A section below considers the role of economic and technical cooperation across economies in devising and implementing market structure policies.

Reinventing government

Improving the efficiency of government can raise total factor productivity. By freeing up resources for potentially more productive uses in other sectors, and by reducing the cost of regulation, government reform and improvement can raise economy-wide productivity. Financial management reforms can lead to better returns on public sector expenditure and investment. Effective reinventing government initiatives mimic successes in the private sector, while recognizing the essential differences between public and private sector activities.

In the United States, for example, the National Performance Review has focused on making government agencies more performance- and customer-oriented, developing performance measures, and ensuring that those measures are used for evaluation.[115] Some of the fruits of that labor are already apparent, in the form of better customer service and greater efficiency. For example, travel operations at the National Security Agency required 79 days to process the paperwork for the average business trip. Frustrated agency staff reinvented the process, with impressive results. The leading newspaper for the business travel industry recently named four organizations as "Master Tacticians" for the excellence of their business travel management operations. Three of the winners were Fortune 500 firms; the fourth was the National Security Agency.

In New Zealand, a series of reforms throughout the 1980s helped transform a stagnant state sector. The government corporatized and subsequently privatized much of the commercial operations of the government; price and wage controls were eliminated; and the management and financing of the state sector was transformed. Authority was devolved

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[115] For an overview of the reinventing government initiative, see Albert Gore, *Common Sense Government: Works Better and Costs Less* (New York: Random House, 1995).

from the central Treasury to department chief executives, who were given controls over budgeting, accounting, and procurement. Permanent tenure was eliminated and performance reviews were implemented, providing incentives for good management. Accrual accounting replaced cash accounting, and budgets could roll over to subsequent fiscal years. These two measures helped eliminate the problem of wasteful end of the year spending and refocused valuations on the current value of all assets, including depreciation (as opposed to their value at the time of purchase). Furthermore, targets were set according to outputs rather than outcomes. Whereas outcomes could be affected by various circumstances, each agency or subcontractor could be held directly accountable for outputs. The result has been a budget surplus in the 1990s and a high growth rate that reached 3.4 percent in 1995.

In many economies, a crucial first step in improving the efficiency of government is minimizing malfeasance and corruption. Such corruption often manifests itself as political instability, and in cross-economy regressions, political instability is linked to lower growth. For example, a one-standard-deviation increase in the average number of revolutions and political assassinations per million inhabitants between 1965 and 1975 was associated with a reduction in the nation's growth rate (ceteris paribus) of 0.4 percentage points per year.[116]. Using measures of the rule of law, corruption in government, and repudiation of contracts by government that are available for over 100 economies,[117] studies find that the rule of law variable is significantly correlated with growth.[118] Providing a rule of law -- an effective legal and political framework with well-defined property rights -- is critical for promoting growth.

Harmonizing regulations and standards

Economies, including those within APEC, can reap substantial benefits through the partial harmonization of regulatory, safety, and product standards.[119] As the Pacific Business

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[116]Barro and Sala-I-Martin, *Economic Growth*, 1995, *op. cit.*, page 435. Also see Alberto Alesina and Roberto Perotti, "Income Distribution, Political Instability, and Investment," *NBER Working Paper No. 4486* (October 1993).

[117]Stephen Knack and Philip Keefer, "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures," American University, February 1994, unpublished paper.

[118] Barro and Sala-I-Martin, *Economic Growth*, 1995, *op. cit.*, page 439-440.

[119]Pacific Business Forum, "The Osaka Action Plan: Roadmap to Realizing the APEC Vision," *Report of the Pacific Business Forum,* 1995, p. 24.

Forum has noted, widely divergent product standards have proved quite costly to the APEC region, and business leaders have identified standards and conformance as one of the most promising arenas for near-term improvement. However, the harmonization process can be daunting and complex, and careful planning and implementation is critical to ensure that the collective standards meet individual economies' needs.

The costs and benefits of harmonization

The economic consequences of any product incompatibility, whether market- or government-generated, depend on the answers to four key questions:

(i) Does the incompatibility help or hinder valuable product heterogeneity in the market?

(ii) To what extent does it affect the costs of production?

(iii) How does it affect the attainment of network externalities (discussed in the box below)?

(iv) How costly would it be to eliminate (for reasons other than an attendant reduction in product variety)?[120]

Network externalities

Network externalities describe systems in which membership becomes more valuable as additional membership volume is added to the system. A classic example is a telephone system. Telephone service is valuable only if other people belong to the network. Research has identified three particular benefits of an expanded (or expanding) network:

- Externalities from a community of users enhance members' ability to exchange information, services, or products in a common format, reducing transaction costs dramatically
- Larger networks tend to engender a bigger market for complementary goods and thus promote innovation and productivity improvements
- Larger networks reduce the market power of sellers and create additional price competition to the benefit of consumers.

Nonetheless, the benefits of network expansions designed to capture these positive externalities can be offset by certain potential costs, particularly if network expansion is based on a concerted standardization effort. Reduced product variety -- in some sense, the intended result of harmonizing in a network -- can constrain the evolution of efficient products and restrain

[120] Alan O. Sykes, *Product Standards for Internationally Integrated Goods Markets* (Washington: Brookings, 1995).

competition. A new harmonized standard can create excessive inertia, which can significantly delay adoption of better, more efficient standards. Standardization is clearly more costly than diversity if ill-conceived standards are imposed.[121] These potential costs should be considered by policy-makers seeking to appropriate the benefits of network externalities.

Unnecessary incompatibilities impose several costs. The most obvious may be excessively high transaction costs: Examples include the frictions between the metric and imperial systems, differences in color television broadcast formats between the United States and Europe, left-hand drive and right-hand drive vehicles, railroad gauge standards, and voltage standards. In such cases, the likely effect is to reduce product variety and international competition in particular markets, as potential exporters are discouraged from entering markets with different standards. This reduction in variety imposes welfare costs on society.

Incompatibilities also increase production costs by precluding production at an efficient scale: the need to produce different products for different markets prevents the realization of economies of scale in manufacturing. The demands of different markets may necessitate costly changes in inventory policies and distribution systems. The segmentation of markets because of incompatibilities also creates competition problems. If the market is small relative to the minimum efficient scale of operations for producers, only one or a few firms may serve it. Welfare losses may result from the exercise of market power.

The mirror image of the costs imposed by incompatibilities is the benefit obtained from harmonization. For example, harmonization may facilitate larger networks. And as discussed in the box above, the existence of network externalities in some settings suggests an additional benefit to harmonization (particularly in areas such as telecommunications and computers). The process of harmonization also has the potential to raise the levels of safety, environmental and regulatory effectiveness within a region. Economic jurisdictions with strict product standards force foreign suppliers that meet those standards or to sacrifice export markets. Once exporters meet the higher standards, they have incentives to encourage higher standards at home as well, since their exports are already meeting those standards.

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[121] Farrell, Joseph, and Saloner, Garth, "Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation," *American Economic Review,* vol. 76, n. 5, December 1986.

Most of the incompatibilities that are barriers to trade carry significant economic costs. Such costs are rarely offset by product heterogeneity valuable enough to compensate for them. Yet these costs do not necessarily imply that incompatibilities should be eliminated:

(i) To eliminate incompatibilities, a choice must be made among the competing options. Often it will not become immediately clear which option is superior.

(ii) Once incompatibilities emerge, it is not costless to correct them. This fact suggests the importance of avoiding incompatibilities in the future, rather than necessarily correcting incompatibilities which already exist.

Adjustment costs

Reallocating resources to more productive uses -- regardless of whether the cause is technological advances, foreign trade, anti-trust policies, reinventing government initiatives, or harmonization efforts -- usually involves some adjustment costs. Employment in the obsolete industry declines, harming workers in that industry. In a rapidly changing economy, some of these workers will find themselves without the skills required for the new jobs being created. In the United States, for example, displaced workers often have difficulty in finding another job immediately: Only about three-quarters of workers displaced between 1991 and 1993 were re-employed as of February 1994. And those workers who do find new jobs often suffer a significant earnings loss: on average, American workers displaced from full-time jobs who find new full-time jobs experience a real earnings loss of 10 percent.[122]

122 Henry S. Farber, "The Changing Face of Job Loss in the United States, 1981-1993," *Department of Economics, Princeton University* (March 12, 1996).

The government can play a crucial role in reducing the costs of job transition. One key ingredient is education. Workers with higher levels of education are usually better able to make the transition from one job to another. Evidence from the United States suggests that better-educated workers are more likely to find new jobs, more likely to find full-time jobs, and experience smaller wage losses than less-educated workers.[123] The reason may be that a significant component of education involves the acquisition of general skills applicable in a variety of environments.

The public sector can also play a direct role in facilitating job transitions. A key objective in the United States is to simplify the job training system, providing a system of skill vouchers and one-stop "reemployment services" where workers can find out more about both training and job opportunities.[124] Another initiative aims to make pension and health care benefits "portable" to enable workers to move from job to job with less friction.

A final role for the public sector is providing temporary unemployment insurance in order to ease the costs of job transition. Such a safety net is important for the sake of equity: society benefits from a dynamic economy, and should assist those hurt by the gales of creative destruction. An effective unemployment insurance may also be important for economic efficiency. If such an insurance program permits risk-averse individuals to embrace changes that will be beneficial to society as a whole and that would not otherwise be adopted, the program could actually raise growth. To the extent that inequality reduces growth -- as discussed above -- unemployment insurance that reduces inequality should facilitate growth.

Government programs to protect people from adjustment costs must be carefully designed, however, to avoid the moral hazard inherent in them: it is essential to "make work pay," or the unemployed will have a large incentive to remain unemployed. Many European economies have unemployment benefit systems with long benefit durations and high replacement ratios, and these systems have undoubtedly contributed to -- or at least facilitated -- the perpetually high unemployment rates experienced in Europe since the early 1980s.[125] In the United States, the Earned Income Tax Credit (EITC) provides low-income families with both income support and greater rewards for working. The credit offsets incomes taxes that low-income working families would otherwise have to pay. But the credit is also refundable, so if the credit exceeds the taxes a family owes, a refund check is issued for the difference. The EITC is widely seen as an effective income support program that still makes work pay.

123 *Ibid.*

124 See Council of Economic Advisors, *Economic Report of the President,* 1996, *op. cit.*, Chapter 7.

125 See OECD, *The OECD Jobs Study: Evidence and Explanation* (Paris: OECD Secretariat, 1994) for an extended discussion of the effects of unemployment insurance systems on unemployment rates and on long-term unemployment shares. Also see Richard Layard, Stephen Nickel, and Richard Jackman, *Unemployment: Macroeconomic Performance and the Labor Market* (New York: Oxford University Press, 1991).

5. Environmental and agricultural policies

The growth accounting framework adopted in the sections above is useful in examining growth in measured output. But truly sustainable growth entails more than maximizing the growth rate of GDP as it is conventionally measured. This section explores two topics -- environmental policies and agricultural policies -- that are largely beyond the realm of conventional GDP accounting.

Environmental policies and sustainable development

Increases in GDP must not be confused with increases in standards of living, nor with increases in long-term wealth. The purpose of this section is to explore the meaning of sustainable development, describe the various ways in which market-based incentives can be used to implement environmental protection, and examine the movement to adopt Green GDP accounts, which attempt to measure the depletion of environmental resources.

What is sustainable development?

The 1987 report of the World Commission on Environment and Development (referred to as the Brundtland Commission) is credited with heightening interest in sustainable development. Most notably the report was responsible for the focus on sustainable development at the Rio Conference of the United Nations Conference on Environment and Development in 1992. The Brundtland Commission defined sustainable development as that which "meets the needs of the present generation without compromising the ability of future generations to meet their needs." This is generally interpreted to mean that the present generation must pass on enough social capital -- human, natural and physical capital -- to ensure a level of welfare that is at least equivalent to that enjoyed by people today.

The definition of sustainability points to two issues which must be resolved: One.) Are economic development and environmental protection are compatible or conflicting goals? Two.) Is it possible to develop an indicator of current welfare and its sustainability, as manifest in the attempt to build Green GDP accounts discussed below.

The issue of the compatibility between growth and environmental protection can be approached in two different ways. The first perspective addresses the issue of whether economic growth leads to improvements in or the degradation of environmental quality. The second perspective asks whether improvements in environmental quality come at the expense of economic growth. On the first question, some researchers argue that economic growth remains a driving force for improved welfare and environmental quality. According to this view, an improvement in either the environment or the economy need not be at the expense of the other. At the very least, there seems to be a consensus that environmental quality is a normal good; as incomes rise people demand a cleaner environment. And there is some evidence of an inverted U-shaped relationship between per capita income and emissions--so that emissions tend to decline once per capita income crosses a threshold level. The problem is that in many cases the turning point occurs at levels of per capita income that are well above levels in most of the world; irreversibilities may set in before the turning point occurs. Furthermore, the empirical evidence of a U-shaped relationship does not indicate causality and leaves the theoretical question about the relationship between growth and the environment unanswered.

The impact of attempts to improve environmental quality, normally through regulation spark much controversy. Some analysts have argued that current environmental policy is a "no-regrets" strategy which improves the environment without significant costs to economic growth. Their argument is that environmental regulations result in the elimination of x-inefficiencies (e.g., due to insufficient use of recycling), correct for market imperfections, and encourage technological change; the benefits of regulation, it is argued, compensates for the costs of regulation. But critics question why, if the improvements were pareto efficient, they would not have been made without the regulations. They argue that regulation imposes more costs than benefits. Whether or not the net benefits of outweigh the costs of regulation depends, in part, on how regulations are implemented. Examples include environmental taxes, tradeable permits, and direct regulation, such as caps on output.

Using market-based incentives for environmental protection

Perhaps the most promising method for reducing any putative costs (in terms of lost output) associated with environmental protection is to ensure that environmental measures rely on market incentives. *Economic instruments (such as charges on emissions, charges on pollution-producing inputs, tradable permits, and enforcement incentives) can reduce the cost of achieving any given level of environmental quality.* Economic instruments can encourage the exploration of new and creative ways of reducing pollution, reduce the administrative burden associated with environmental protection, and generally provide a more efficient alternative to regulation-based approaches. Canada is currently conducting a survey, under the auspices of the APEC Economic Committee, of the use of economic instruments for environmental purposes in the APEC economies.[126]

During the past few years, the Intergovernmental Panel on Climate Change (IPCC), formed by the World Meteorological Organization and the United Nations Environment Programme, has formally recognized the relationship between carbon-dioxide (CO_2) emissions and global warming. Current estimates suggest that, of all greenhouse gases, CO_2 has the largest impact on global warming. Increases in atmospheric CO_2 could threaten global climate patterns and, unchecked, may cause widespread ecological disasters in the future -- which would, in turn, threaten economic security and well-being. This section will discuss the two principal economic policy instruments for averting this outcome -- carbon taxes and tradable permits for CO_2 sources or emissions.

Carbon taxes

Fossil fuels (coal, oil, and natural gas) are usually priced below the social marginal costs imposed from releasing CO_2 into the atmosphere. As a result, the demand for fossil fuels is higher than if market conditions fully accounted for environmental and economic damages. A carbon tax can be used to internalize this externality if the tax rate equals the net marginal social damages due to CO_2 emissions (net of abatement costs). Because CO_2 emissions are a monotonic function of carbon content, economies could effectively tax carbon content in fuels to limit the release of atmospheric CO_2.[127] Firms would then have an incentive to reduce emissions to the socially optimal point.

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[126] APEC. *Draft Survey of Economic Instruments in APEC Economies*. (Singapore: APEC Secretariat, 1996).

[131] If the objective of an environmental policy is to reduce CO2 emissions, a carbon tax will be more effective than other options such as an energy or gasoline tax, since the carbon tax targets the direct source of CO2. Other environmental impacts associated with fuel burning include NOx and SOx emissions. If environmental policy goals are broader, such as the environmental impacts of fuel burning or vehicle use, energy or gasoline taxes may

Taxes, working through the price system, could be quite effective in reducing emissions by encouraging substitution in favor of technologies less reliant on fossil fuels. Experience in the U.S. and other economies shows that fossil fuel users reduce their demand significantly when prices increase. Reduced demand for fossil fuels will limit other environmental damages associated with fuel burning besides those from CO_2 emissions.

Estimating the optimal tax level presents a potential problem with carbon taxes. Given the uncertainty regarding the impact of global warming, it is difficult to determine the optimal tax rate precisely, but estimates may still be appropriate. Furthermore, the distributional impact of a carbon tax may burden lower-income households because these households tend to have a larger share of fossil fuel-related costs relative to those with higher incomes.[128]

There are other significant issues that have to be addressed in any consideration of a carbon tax. These include the need to approach the issue on a global basis and ensure that the design of a proposed carbon tax minimizes administrative and compliance costs.

Tradable permits

In contrast to the cost standard underlying the philosophy of the carbon tax, air pollution permits are based on a performance standard. Under a tradable permits program, a government agency would specify a cap on CO_2 emissions. Emissions of CO_2 would then be allowed only with a permit. Firms with high abatement costs could purchase permits for surplus pollution rights from other firms with low abatement costs.

The principal advantage of permit programs (if implemented faithfully) is that they provide certainty as to the quantity of aggregate emissions, whereas the impact of a tax on the amount of emissions is subject to some uncertainty. Potential disadvantages of a permits program include

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be equally or more appropriate than the carbon tax. Lawrence H. Goulder, "Using Carbon Charges to Combat Global Climate Change," *Paper presented at the Annual Conference, Center for Economic Policy Research*, December 1990, pp. 24-25 (comparing a carbon tax to a gasoline or overall energy tax); p. 11 (discussing the monotonicity of carbon content in fuels and CO2 emissions).

[128] Goulder, "Using Carbon Charges to Combat Global Climate Change," 1990, *op cit.*

relatively high transaction costs -- for example, if permits markets are too thin -- and resistance from regulators.[129]

A permit program for CO_2 may be easier to implement than for other gases because CO_2 is a uniformly-mixed pollutant. Pollutants such as NO_x are not uniformly distributed, and trading may exacerbate environmental damages in areas where emissions increase, thereby creating "hot spots." In addition, certain pollutants may have thresholds beyond which the environment cannot tolerate increased levels. If trading causes such pollutants to increase beyond environmental thresholds, environmental damages could be severe.

The United States Environmental Protection Agency (EPA) has initiated several programs for tradable permits. Under the 1990 amendments to the Clean Air Act, for example, power plants may trade pollution allowances for SO_2. A CO_2 tradable permits program could function similarly to SO_2 allowance trading, but the CO_2 system could be intersectoral to allow flexibility and increased cost-effectiveness. Nonetheless, there are many other differences between the CO_2 and SO_2 trading systems. For example, CO_2 is emitted from many sources -- including large industrial, utility, transportation, and residential sectors -- whereas SO_2 is limited to utilities and large industrial boiler systems.

International cooperation to engage in a multilateral CO_2 trading system could partly draw on the experience of agreements among Annex-I economies, a group of industrialized economies which signed the Framework Convention on Climate Change. By signing the Convention at the UN Conference on Environment and Development in Rio de Janeiro in 1992, the economies agreed to adopt policies with the intent of reducing their greenhouse emissions to 1990 levels by the year 2000. The Convention states that Annex-I economies may work jointly with other economies to meet objectives, and the parties have begun to explore the feasibility of international tradable permits systems as methods for effectively reaching their environmental goals.[130]

In one potential international permits program, international negotiations might determine an aggregate CO_2 emission cap, and individual economies might then be given permits for their total

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[129] A permit program may also require a certain measure of adjustment costs in public sector agencies responsible for environmental protection.

allowable emissions. Such a process might encourage participation in a trading program because economies would retain sovereignty and flexibility over mechanisms of domestic abatement to reach their permitted levels. Possible methods for permit allocation include historical responsibility, equal distribution, comparable burdens, willingness-to-pay, land area, per GNP, and per capita, among others. Trading in permits might be managed by a self-regulated private market with coordination by an international agency.

The trading system will be more efficient if transaction costs -- such as the costs of matching buyers with sellers or obtaining approval for trades -- are low. Costs will vary depending on the number of participants in the market and the level of the CO_2 product cycle chosen for allowances. In the EPA Acid Rain Program, the emergence of a number of brokers who facilitated trades tended to keep transaction costs low.[131] A CO_2 tradable permits program would similarly need to incorporate a mechanism to keep costs to a minimum.

Critical to any tradable permits program is an effective monitoring and enforcement system. Participants in trading programs must give accurate assessments of any changes in carbon content or CO_2 emissions and must purchase the correct level of additional permits if they choose to increase their rights to pollute. The effectiveness of monitoring and enforcement depends upon the level of the product cycle chosen for trades, the monitoring technology, and a number of other institutional factors.

A monitoring program for CO_2 emissions from electric power plants might be modeled after the monitoring system used in the U.S. Acid Rain program, Continuous Emission Monitoring (CEM).[132] The CEM system measures SO_2 concentration and volumetric flow. Measurements are then compared to permit allocations to evaluate compliance. Such a monitoring system may not be appropriate for an international trading scheme because it is relatively costly and because economies have different levels of technologies. Although there may be important economic benefits resulting from the development of an alternative monitoring system better suited for inter-economy

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136 "Preliminary Development Plan for A Pilot Global Warming Emissions Trading Programme." *Report of Center Financial Products Limited*, February 1996.

131 Barry D. Solomon, "Global CO2 Emissions Trading: Early Lessons from the U.S. Acid Rain Program," *Paper presented at 90th Annual Meeting of the Association of American Geographers*, April 8, 1994.

132 Under such circumstances, other monitoring mechanisms would be needed for additional CO2 sectors such as transportation and industry. *Ibid*.

environmental protection, enforcement is particularly challenging in an international setting given economies' legitimate sovereignty concerns.

Green GDP accounts

The trade-offs between economic growth and environmental quality has highlighted the importance of fully incorporating changes in environmental quality and natural resource availability into economic measurements and models. Demands to augment national accounts by introducing "Green GDP" accounts -- what have been alternatively described as natural resource accounting, green accounting and environmental accounting -- is a response to this new focus.

Many governments throughout the world have begun to adopt the United Nations new national accounting guidelines as prescribed in its Satellite System for Integrated Environmental and Economic Accounting (SEEA). For example, one study using a Green GDP framework found that environmentally adjusted production was 13 percent less than conventionally measured net domestic product in Mexico between 1986 and 1990. A case study for Papua New Guinea found a similar result.[133] Current efforts differ due to differences in previous experience, financial support and because many forms of activities -- including physical natural resource accounts, accounts of pollution emissions, environmental protection expenditure accounts and adjusted national accounting aggregates -- all fall under the rubric of environmental and resource accounting. The fundamental point is that measurement is a crucial first step to corrective action.

Agriculture and food policy

The tremendous economic growth in the APEC region, coupled with a rising population, have placed increasing stress on the water tables and natural resources to sustain the considerable food needs of relevant economies. As evidence of this, the supply of arable land in the Asia Pacific region (in particular, or in the world in general) is shrinking markedly. Since Malthus's 1798 essay on the race between population and the food supply, there have been occasional predictions of impending worldwide food shortages.[134] And there is once again concern regarding the world's

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[133] United Nations Development Programme, Human Development Report 1996 (New York: Oxford University Press, 1996), p. 63, and Peter Bartelmus, "Environmental Accounting: A Framework for Assessment and Policy Integration," *Paper presented at International Monetary Fund, seminar on Macroeconomics and the Environment*, Washington DC (May 10-11, 1995).

[134] In 1798, Robert Malthus published his Essay on Population in which he claimed that the earth was not capable of producing enough food to support its rapidly growing population. The field of economics is often

food supply (see, for example, Lester Brown's article, *Who Will Feed China: A Wake-up Call for a Small Planet*). Increasing demand for grain as a result of continued population growth and increasing per capita income, it is argued, implies that the world will soon suffer from severe food shortages.

However, market incentives should not be underestimated. As shortages arise, prices increase, and more resources are naturally devoted by market forces to alleviate the shortages. In the past, predicted world food shortages have been averted through a combination of rising food prices, improved agricultural technology, and government policies and investment.[135] Throughout history, these market dynamics have allowed the agricultural sector to meet rising demand with a smaller proportionate share of resources. For example, the farm population in the United States as a percentage of total population has fallen dramatically: In 1880, 44 percent of the nation's population was involved in agriculture. By 1970, that share had fallen to under 5 percent. With the introduction of new technology, agricultural productivity has rapidly increased. As the United State's population and demand for food have continued to grow, increased productivity has made it possible for a much smaller share of the population to be responsible for the food supply. Similarly, in China today, there is room to boost yields in order to continue to meet grain demand.[136] The current worldwide "crisis" will also most likely be avoided through the reactions of market participants. Through the market's self-correcting mechanisms, rising demand for food will result in rising prices, to which consumers, livestock producers, and farmers will respond.[137] Higher prices temper demand by consumers.[138] Prices also serve as an incentive for producers to expand their output. Both effects mitigate any incipient shortages. Higher prices stimulate increased food supply by providing incentives for expanded agricultural land use and increased productivity of that land. Additional investment brought about through rising food prices will improve agricultural technology, expanding output and

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known as the "dismal science" because of Malthus' predictions of massive deaths through starvation and disease would result.

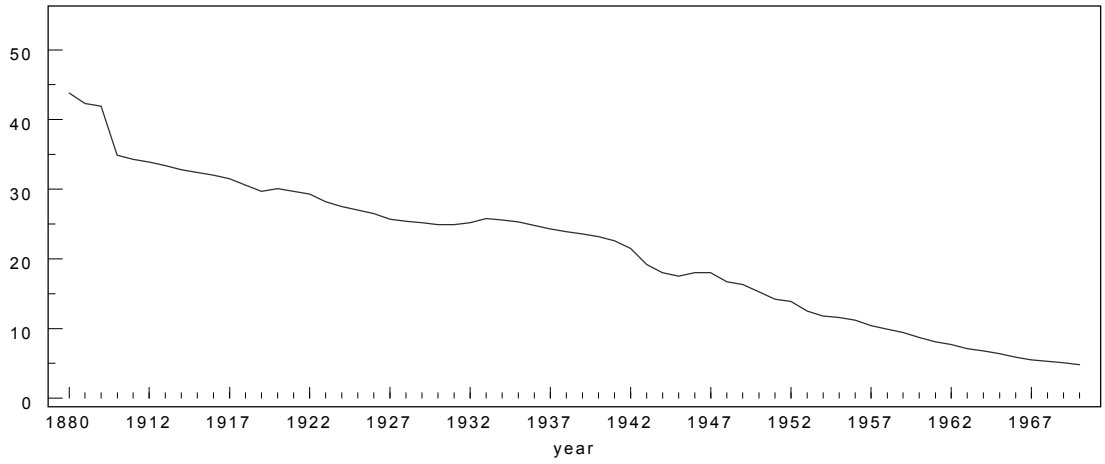
135 For example, in 1967, the U.S. President's Science Advisory Committee published a report announcing that a serious worldwide food shortage would occur by 1985. This crisis was avoided as a result of the Green Revolution. The Green Revolution -- in which the use of fertilizers, irrigation, and new crop varieties became widely spread -- allowed the production of food to grow along with the world's population.

136 Chinese farmers have systematically underreported the quantity of land they hold. This has resulted in official underestimates of land in production. In an effort to compensate for these underestimates, officials have overestimated crop yields. As a result, there is greater potential to expand yields than official Chinese figures may reflect.

137 For example, higher income levels in China are resulting in growing demand for grain and meat. Higher incomes may also allow for the development of more efficient production techniques.

making existing land more productive. Crop yield increases can come through improved seed varieties, limiting losses from pests and disease, investment in irrigation and chemical fertilizer plants, and raising the technical capabilities of farmers to manage the application of these inputs. [139] Technological advances in post-harvest storage and transportation of grain will also increase the amount of food available for consumption. The application of these new technologies, spurred especially by the influence of the market, will help to insure that the world's growing demand for food will continue to be met.[140]

Figure 2: Farm population as percentage of total population in the US



While past experience and basic economic principles suggest that the rising demand for food output will be met, achieving increased agricultural productivity has additional demographic, social, and economic consequences, both for a domestic economy and entire regions. Adjustment costs are pervasive. For example, as agriculture becomes more efficient and subsistence agriculture is eliminated, farmers must increasingly find alternative employment. The shift of resources may also result in overburdened urban infrastructure, requiring additional investment. Moreover, short-term price increases may give the agricultural sector an incentive to overtax the land at existing

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138 In the case of grain, rising prices during the last year have curbed demand for cereals and grain for animal feed.

139 United States Department of Agriculture, *International Agriculture and Trade Reports: China*, June 1995, p. 12.

140 Governments can support the market adjustment process leading to greater output and productivity by assessing their comprehensive agricultural policies and eliminating subsidies financing inefficient activities.

technology levels, creating the potential for diminished agricultural resources in the future. As in other cases, the existence of these adjustment costs does not undermine the benefits of making the transition. The role of public policy is to ease the adjustment costs in order to obtain the full benefits of a dynamic economy.

Finally, there is growing concern that increased food output comes at the expense of diversity. Only four carbohydrates--wheat, maize, rice, and potatoes--produce over 75percent of the world's food; in Sri Lanka, over 10,000 strains of rice have been replaced by 4 dominant strains in the last five years. Uniformity is cost effective, as the inputs can be mass produced and technologies transferred across borders. However, the insurance value of diversity has been eroded, as variability and covariance in production has increased, which increases risk in food production. An international gene bank helps preserve options to preserve species and genes that would otherwise be eliminated. International coordination is needed to provide incentives for host economies to continue to preserve and local species and prevent continued extinctions.

6. Conclusions

The Asia Pacific region is characterized by dynamic, growth-oriented economic activity and enjoys the highest real growth rate of any region in the world. Nonetheless, APEC member economies face a number of important challenges, including sustaining growth, reducing significant disparities in levels of economic development, and addressing long-term environmental and sustainability issues. In addressing these challenges, the APEC region can benefit substantially from economic and technical cooperation. APEC has the institutional capacity to promote such cooperation, which can help member economies overcome collective action problems, share best practices, and build institutions -- thereby achieving greater regional long-term growth.

As the growth-accounting framework highlights, APEC economies should focus on promoting labor market participation and productivity, capital investment, and improvements in total factor productivity. Structural policies, such as liberal, open markets, promotion of domestic and international competition, and international harmonization of standards and regulations will further promote growth by capitalizing on each economy's competitive advantage and economies of scale. The emphasis on growth, however, must always keep the end goal in mind: improvement in the quality of life for all APEC citizens. Public policy ought to focus on minimizing necessary adjustment costs. And policy needs to focus on the promotion of a development path compatible with environmental sustainability. Such efforts, both unilaterally and collectively -- through APEC processes -- will have lasting effects on the region's success in meeting ongoing challenges of freer trade and sustained growth.