PREFACE

The number of those in absolute poverty in the world remains virtually unchanged from what it was decades ago. Some countries have achieved successful development over a short period of time, but they are far too few in number. Meanwhile, the richer countries have continued to make steady progress, contributing to an ever-widening gap between these precincts of prosperity and the rest of the world. The poorest countries and the poorest peoples appear stuck in what might be termed a "poverty trap".

In June 2000, at the twenty-fourth special session of the United Nations General Assembly, Member States committed themselves to halving the proportion of the world's population living in extreme poverty by 2015. While reducing poverty has always been an international development objective, this is the first time there has been a universally agreed, time-bound goal. Of course, setting targets is one thing and reaching them is quite another. Both national and international authorities will have to improve on their record.

At the international level, some of the necessary actions are more widely recognized and within our grasp. It is agreed, for example, that the external debt of the poorest countries should be reduced to a sustainable level or, in some cases, eliminated altogether. The poor must also have access to world markets, meaning that tariffs and other measures that erect obstacles to participation should be removed. And if poor countries are to develop the capacity to take advantage of the new opportunities that such actions should make available, they will continue to need official development assistance.

Above all, however, poor countries and poor people must place themselves in a position to seize the opportunities that will improve their prospects. There is no single, guaranteed way for them to achieve the poverty reduction goal that has been set for 2015, but it will be difficult if not impossible for them to do so unless they also raise their rate of economic growth. There are different ways of doing this, and countries need to decide on

their own development strategies in the light of their own national traditions, circumstances and resources. But the experience of the past 50 years suggests some key paths to follow. Part two of the **World Economic and Social Survey 2000** *examines some of these areas, ranging from agriculture and governance to education and information technology, and provides examples of countries that have been able to escape some of the traps in which they had been mired.*

The world has the resources to reduce and eliminate poverty. But we need to know how *to achieve this goal. The present* **Survey**, *like its predecessors, examines theories and experiences of development as part of a continuing effort to enhance international understanding of this vital endeavour. It is my sincere hope that such an understanding will translate into real, positive change in the lives of the poor.*

KOFI A. ANNAN
Secretary-General

FOREWORD

Part one of the present edition of the ***World Economic and Social Survey*** chronicles a remarkable recovery in the world economy after the crisis years 1997-1999. Although, possibly fortuitously, the volume of international financial flows has not returned to its pre-crisis level, international financial markets are again displaying a sense of calm. International trade has also largely recovered from the setback it suffered following the financial crises. Although the losses incurred during 1997-1999 can never be made up, rates of economic growth in most countries, most notably in the crisis countries, have recovered or are in the process of recovering. For those directly affected, however, many of the social consequences of the crisis persist, with unemployment and poverty levels remaining higher than they were a few years ago.

The short-term forecast in this ***Survey*** is for continued, and increasingly widespread, economic growth. However, the recovery has been accompanied by the development of a number of macroeconomic tensions at the global level. These pose a potential threat to the short-term stability and growth of the world economy as a whole and have to be addressed by policy makers. At the same time, the international community should continue its work to meet the new needs that became apparent during the crisis, notably updating the international financial architecture to ensure that it meets present-day requirements and is better able to deal with future financial crises.

Looking further ahead, there is a widespread view that we are on the cusp of a new period of prosperity for many, heralded by the revolution in information and communications technologies. This revolution offers new possibilities for tackling some age-old problems, including that of extreme poverty. At the same time, there is concern that this revolution may widen the "digital divide" and may leave behind those whose lives we have committed ourselves to improving. Despite the present increases in global economic growth, for example, many of the poorest countries are still achieving only modest results—their growth continues to fall far short of what is required to achieve meaningful development.

Such a situation is inconsistent with the recent pledge—highlighted by the Secretary-General in his preface—to reduce by half the proportion of people living in extreme poverty in the next 15 years. The challenge is for the majority of the poorer countries to break out of their "poverty trap" by finding a path to sustained and sustainable development—a path that has proved so elusive to so many countries for so long.

Part two of the ***Survey*** examines a number of critical points on this path. Some of these points, such as the need to achieve progress in agriculture, used to have a key role in development policies but have suffered relative neglect over the years. Others, such as the role of education and technology, have always been in the agenda but the results achieved have been mixed and many lessons have been learned. Yet other dimensions, such as the role of institutions, have come to the forefront only recently. The objective of Part two is to identify some of the actions that countries can take to start a period of rapid and sustained growth so that living standards may increase appreciably over a relatively short period of time.

World Economic and Social Survey 2000 was prepared by the Development Policy Analysis Division of the Department of Economic and Social Affairs, drawing on the continued cooperation of the regional commissions of the United Nations, the United Nations Conference on Trade and Development, the International Monetary Fund and the World Bank.

Nitin Desai
Under-Secretary-General
for Economic and Social Affairs

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EXPLANATORY NOTES

The following symbols have been used in the tables throughout the report

.. **Two dots** indicate that data are not available or are not separately reported.

– **A dash** indicates that the amount is nil or negligible.

- **A hyphen (-)** indicates that the item is not applicable.

- **A minus sign (-)** indicates deficit or decrease, except as indicated.

. **A full stop (.)** is used to indicate decimals.

/ **A slash (/)** between years indicates a crop year or financial year, for example, 1990/91.

- **Use of a hyphen (-)** between years, for example, 1990-1991, signifies the full period involved, including the beginning and end years.

Reference to "tons" indicates metric tons and to "dollars" ($) United States dollars, unless otherwise stated.

Annual rates of growth or change, unless otherwise stated, refer to annual compound rates.

In most cases, the growth rate forecasts for 2000 are rounded to the nearest quarter of a percentage point.

Details and percentages in tables do not necessarily add to totals, because of rounding.

The following abbreviations have been used:

AIDS	acquired immunodeficiency syndrome
AMC	asset management corporation
ASEAN	Association of Southeast Asian Nations
BIS	Bank for International Settlements (Basel)
bpd	barrels per day
CCFF	Compensatory and Contingency Financing Facility (IMF)
CGIAR	Consultative Group on International Agricultural Research
CIS	Commonwealth of Independent States
COMTRADE	United Nations External Trade Statistics Database
CPI	consumer price index
DAC	Development Assistance Committee (of OECD)
DNA	deoxyribonucleic acid
EAP	Enhanced Access Policy (IMF)
EBRD	European Bank for Reconstruction and Development
ECA	Economic Commission for Africa
ECB	European Central Bank
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
EDF	European Development Fund
EFF	Extended Fund Facility (IMF)
EMU	European Economic and Monetary Union
EPZ	export-processing zone
ERM II	new exchange-rate mechanism of the European Monetary System
ESAF	Enhanced Structural Adjustment Facility (IMF)
ESCB	European System of Central Banks
EU	European Union
Euribor	Euro Interbank Offered Rate
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
f.o.b.	free on board
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GIEWS	Global Information and Early Warning System for Food and Agriculture (FAO)
GNP	gross national product
GWP	gross world product
HICP	Harmonized Index of Consumer Prices
HIPC	heavily indebted poor countries
HIV	human immunodeficiency virus
IBRD	International Bank for Reconstruction and Development
ICP	International Comparison Project
ICT	information and communications technology
IDA	International Development Association
IFC	International Finance Corporation (World Bank)
ILO	International Labour Organization
IMF	International Monetary Fund
INTRASTAT	system of data collection for intra-EU trade
IPO	initial public offering
IRRI	International Rice Research Institute
IT	information technology
ITC	investment trust company
M&A	mergers and acquisitions
MDI	multilateral development institution
MERCOSUR	Southern Cone Common Market
MFN	most-favoured nation
MIGA	Multilateral Investment Guarantee Agency (World Bank)

NAFTA	North American Free Trade Agreement
Nasdaq	National Association of Securities Dealers Automated Quotations System
NASSCOM	National Association of Software and Service Companies
NATO	North Atlantic Treaty Association
NBER	National Bureau of Economic Research (Cambridge, Massachusetts)
NPL	non-performing loan
NPV	net present value
ODA	official development assistance
OECD	Organisation for Economic Cooperation and Development
OPEC	Organization of the Petroleum Exporting Countries
PC	personal computer
PNTR	permanent normal trading relations
ppp	purchasing power parity
PRGF	Poverty Reduction and Growth Facility (IMF)
Project LINK	international collaborative research group for econometric modelling, coordinated jointly by the Development Policy Analysis Division of the United Nations Secretariat, and the University of Toronto
PRSP	Poverty Reduction Strategy Paper (IMF and World Bank)
R&D	research and development
SAF	Structural Adjustment Facility (IMF)
SDRs	special drawing rights (IMF)
SFF	Supplementary Financing Facility (IMF)
SITC	Standard International Trade Classification
SMEs	small and medium-sized enterprises
SOE	State-owned enterprise
SRF	Supplemental Reserve Facility (IMF)
STF	Systemic Transformation Facility (IMF)
TNC	transnational corporation
TRIMS	trade-related investment measures
TRIPS	trade-related aspects of intellectual property rights
UNAIDS	Joint United Nations Programme on Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS)
UNCTAD	United Nations Conference on Trade and Development
UN/DESA	Department of Economic and Social Affairs of the United Nations Secretariat
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNU	United Nations University
VAT	value-added tax
WHO	World Health Organization
WIDER	World Institute for Development Economics Research
Y2K	year 2000 date conversion problem of computers

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Secretariat concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The term "country" as used in the text of this report also refers, as appropriate, to territories or areas.

For analytical purposes, the following country groupings and sub-groupings have been used:[a]

Developed economies (developed market economies):

Europe, excluding the European transition economies
Canada and the United States of America
Japan, Australia and New Zealand.

Major developed economies (the Group of Seven):

Canada, France, Germany, Italy, Japan, United Kingdom of Great Britain and Northern Ireland, United States of America.

European Union:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom of Great Britain and Northern Ireland.

Economies in transition:

Central and Eastern European transition economies (CEETEs, sometimes contracted to "Eastern Europe"):

Albania, Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia and successor States of the Socialist Federal Republic of Yugoslavia, namely, Bosnia and Herzegovina, Croatia, Slovenia, the former Yugoslav Republic of Macedonia, Yugoslavia.

Baltic States

Estonia, Latvia and Lithuania.

Commonwealth of Independent States (CIS)

Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

Developing economies:

Africa

Asia and the Pacific (excluding Japan, Australia, New Zealand and the member States of CIS in Asia)

Latin America and the Caribbean.

Sub-groupings of Asia and the Pacific:

Western Asia plus Islamic Republic of Iran (commonly contracted to "Western Asia"):

Bahrain, Cyprus, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen.

Eastern and Southern Asia:

All other developing economies in Asia and the Pacific (including China, unless listed separately). This group has in some cases been subdivided into:

China

South Asia: Bangladesh, India, Nepal, Pakistan, Sri Lanka
East Asia: All other developing economies in Asia and the Pacific.

Sub-grouping of Africa:

Sub-Saharan Africa, excluding Nigeria and South Africa (commonly contracted to "sub-Saharan Africa"):

All of Africa except Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Nigeria, South Africa, Tunisia.

For particular analyses, developing countries have been subdivided into the following groups:

Net-creditor countries:

Brunei Darussalam, Kuwait, Libyan Arab Jamahiriya, Oman, Qatar, Saudi Arabia, Singapore, Taiwan Province of China, United Arab Emirates.

Net-debtor countries:

All other developing countries.

Fuel-exporting countries:

Algeria, Angola, Bahrain, Bolivia, Brunei Darussalam, Cameroon, Colombia, Congo, Ecuador, Egypt, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Kuwait, Libyan Arab Jamahiriya, Mexico, Nigeria, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Trinidad and Tobago, United Arab Emirates, Venezuela, Viet Nam.

Fuel-importing countries:

All other developing countries.

Least developed countries:

Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of the Congo (formerly Zaire), Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Samoa, Sao Tome and Principe, Sierra Leone, Solomon Islands, Somalia, Sudan, Togo, Tuvalu, Uganda, United Republic of Tanzania, Vanuatu, Yemen, Zambia.

The designation of country groups in the text and the tables is intended solely for statistical or analytical convenience and does not necessarily express a judgement about the stage reached by a particular country or area in the development process.

[a] Names and composition of geographical areas follow those of "Standard country or area codes for statistical use" (ST/ESA/STAT/SER.M/49/Rev.3), with one exception, namely, Western Asia, which in the *Survey* includes the Islamic Republic of Iran (owing to the large role of the petroleum sector in its economy) and excludes the transition economies of the region. Also, "Eastern Europe", as used in this *Survey,* is a contraction of "Central and Eastern Europe"; thus the composition of the region designated by the term differs from that of the strictly geographical grouping.

PART ONE

STATE OF THE WORLD ECONOMY

I THE WORLD ECONOMY IN 2000

Following the widespread economic setbacks in 1997-1998, the healing process in the global economy gathered momentum in the course of 1999 and is expected to broaden and deepen in the near future. The expansion in 2000 is likely to be even more dynamic than in the last two quarters of 1999, in which case growth in the global economy would return to the levels attained in the mid-1990s. As then, the current outlook is for this rate of growth to be sustained over the next few years. However, some macroeconomic imbalances that have developed as part of the recovery pose a potential threat to this favourable outlook and need to be addressed. Moreover, while widespread, the improved prospects are not universal. Continued efforts need to be made at all levels to ensure that the benefits of revitalized growth penetrate to all countries and individuals. Information and communications technologies (ICTs) can contribute to these efforts but spreading their benefits to where they are most needed will require conducive national policies and international support.

THE IMPROVING INTERNATIONAL ENVIRONMENT

Growth of gross world product (GWP) is expected to accelerate from 2.7 per cent in 1999 to 3½ per cent in 2000, this figure being the highest since 1996 (see table I.1). Global trade, which had been sluggish as a result of the financial crises and the concomitant economic slowdown, began to recover in the second half of 1999. Growth of world exports is forecast to be about 8 per cent per year in 2000-2001, compared with 4.8 per cent in 1999 and even less in 1998.

For countries and regions with spare production capacity in expanding sectors, demand for their exports from countries with buoyant domestic absorption levels has provided a crucial impetus to their recovery. Other countries, notably those that remain heavily dependent on non-fuel commodity exports, have been largely bypassed by the recovery in world trade.

International trade was severely depressed during 1997-1998 as a result of the fallout of the international financial crises. Many economies in transition and developing countries were forced to cut their imports substantially because the sudden deterioration in external financing conditions made it imperative to reduce external deficits. In addition, steep currency devaluations made imports more expensive for domestic consumers, inducing a cutback in domestic demand as well as a shift in demand towards domestic products. As a result, the impact of the financial crises on the economy of some crisis countries, begin-

ning with Thailand, was transmitted to other countries, in the first instance in East and South-East Asia, via trade and other international linkages. The initial cuts in import demand by the crisis countries reduced exports, incomes and hence import demand elsewhere, adversely affecting international commodity prices and thus setting off a vicious circle. The more interdependent the world economy becomes, the larger these multiplier effects will tend to be. As a result, world trade declined more and for a longer period than world output during the downturn.

When world output started to recover in early 1999, international trade did not respond immediately. It lagged until the second half of 1999. For many crisis-affected economies, exports were one important factor driving their economic recovery. Their import demand did not pick up immediately because of the large slack in domestic capacity, devalued currencies and rebuilding of foreign reserves, but eventually this multiplier effect turned into a virtuous circle. With the recovery in world output solidifying, the benefits of reinforcing

Table I.1.
GROWTH OF WORLD OUTPUT AND TRADE, 1981-2000

Annual percentage change

	1981-1990	1991	1992	1993	1994	1995	1996	1997	1998	1999[a]	2000[b]
World output[c]	2.9	1.1	1.9	1.3	3.0	2.7	3.6	3.4	1.9	2.7	3½
of which:											
Developed economies	3.0	1.1	1.8	0.8	2.7	2.3	3.2	3.0	2.1	2.6	3
Economies in transition	1.8	-8.0	-11.6	-6.7	-7.1	-0.6	0.0	2.3	-0.6	2.1	3¾
Developing economies	2.3	2.9	4.8	5.2	5.6	5.0	5.7	5.4	1.5	3.4	5¼
World trade[d]	4.5	4.3	5.7	4.6	10.5	8.6	5.5	9.2	3.3	4.8	8
Memorandum items:											
World											
Number of countries with rising per capita output	..	72	76	67	99	109	120	122	100	101	125
Number of countries in sample	..	129	140	145	145	145	145	145	145	145	145
Developing economies											
Number of countries with rising per capita output	..	57	59	51	64	72	80	78	58	58	75
Number of countries in sample	..	93	95	95	95	95	95	95	95	95	95
World output growth with PPP-based weights[e]	3.0	1.1	2.0	1.8	3.8	3.5	4.1	4.2	2.4	3.3	4¼

Source: Department of Economic and Social Affairs of the United Nations Secretariat (UN/DESA).

a Partly estimated.
b Forecast, based in part on Project LINK.
c Calculated as a weighted average of individual country growth rates of gross domestic product (GDP), where weights are based on GDP in 1995 prices and exchange rates.
d Average of the growth rates of the volume of exports and imports for historical data. Only volume of exports data are used for estimate and forecast.
e Employing an alternative scheme for weighting national growth rates of GDP, based on purchasing power parity (PPP) conversions of national currency GDP into international dollars (see introduction to annex statistical tables).

demand through trade and other commercial links should be reaped by an increasing number of countries and regions. It should also, in addition to the impetus emanating from strong export performances, provide the wherewithal for domestic consumption and investment to sustain growth.

This salutary multiplier effect through trade expansion is being reinforced by the bottoming out of most non-fuel commodity prices. Fuel prices, however, have risen steeply and are expected to remain comparatively high in 2000 (see chap. II).

Access to international financing is improving for a growing number of emerging market economies. Net private capital flows to emerging markets in 1999 barely increased from the low levels of 1998, when flows contracted to less than half of their pre-crisis peak, but have been recovering modestly since mid-1999. As international investor sentiment towards emerging markets continues to improve, net private flows to these countries are projected to increase in 2000. This will be driven chiefly by foreign direct investment (FDI), strengthened portfolio equity flows, and a moderate rebound in non-bank lending (see chap. II). In 1999, emerging market economies registered another large outflow of commercial bank lending and this is likely to continue in 2000 as financial institutions in the former crisis countries reduce their liabilities to foreign banks. Net official flows are also expected to decline, as most countries that were deeply affected by the financial crises are repaying the emergency assistance they secured at that time.

Along with the stabilization of most emerging financial markets and improved investor sentiment, risk premiums for these economies have fallen since mid-1999, as indicated by the decline of the interest-rate spreads between emerging market sovereign bonds and United States Treasury bonds (see chap. II). For most emerging market economies in Asia, the spreads in secondary markets have now returned to the levels observed prior to the default of the Russian Federation in August 1998. Those for Latin American borrowers have also fallen, though they remain well above the pre-crisis levels. For the Russian Federation, however, spreads continue to be at a punitive level, but are expected to decline in the near term.

Despite the anticipated upturn in capital flows, external financing will remain a major factor restraining the sustainability of strong economic growth in the medium to long run in most emerging market economies. While there is expected to be a further narrowing of interest-rate spreads in 2000, any major perturbation in financial markets of developed countries, such as marked corrections in stock markets or significant increases in interest rates, could adversely affect investor sentiment towards emerging markets. This would again widen the spreads and affect, possibly in major ways, the volume, composition and direction of capital flows to emerging market economies.

Despite these various improvements in the international environment, many countries have yet to participate in the recovery or see their pace of economic expansion return to pre-crisis levels. Growth patterns among country groups and within each of those broad groups remained divergent in 1999. Furthermore, while all developed countries recorded gains in their per capita gross domestic product (GDP) in 1999, the number of developing countries that recorded falling per capita output remained at 37 (out of the 95 regularly monitored) (see table I.2). However, the proportion of the population living in

developing countries that experienced positive per capita growth rose from about 74 per cent in 1998 to some 78 per cent in 1999.

Sustained growth of per capita output of 3 per cent per annum is postulated as the minimum necessary to enable developing countries to make a significant reduction in poverty over the long run. The number of developing countries that achieved this benchmark declined from 24 in 1998 to 21 in 1999 and the proportion of the developing-country population in this category dropped in 1999 to 58 per cent from 61 per cent in 1998. Some middle-income countries in South-East Asia joined the group, while the number from Africa, especially sub-Saharan Africa, fell. The number of developing countries that failed to increase per capita GDP by 3 per cent in 1999 and the share of the population affected remained large. Moreover, only a modest improvement seems to be in

Table I.2.
DEVELOPING COUNTRIES: GROWTH OF PER CAPITA GDP BY REGION, 1997-2000

	Number of countries monitored	Decline in GDP per capita				Growth of GDP per capita exceeding 3 per cent			
		1997	1998	1999[a]	2000[b]	1997	1998	1999[a]	2000[b]
Frequency of high and low growth of per capita output (number of countries)									
Developing countries	95	17	37	37	20	33	24	21	29
of which:									
Latin America	24	2	8	12	4	8	5	5	7
Africa	38	8	13	12	7	10	11	6	10
Eastern and Southern Asia	18	3	9	2	1	12	6	8	11
Western Asia	15	4	7	11	8	3	2	2	1
Memorandum items:									
Least developed countries	40	8	16	16	14	10	9	5	8
Sub-Saharan Africa	31	5	10	9	6	8	8	4	7
Percentage of population									
Developing countries	95	9.4	25.7	21.9	7.4	70.7	61.0	58.0	63.3
of which:									
Latin America	24	2.0	55.1	65.0	5.3	37.6	22.6	5.8	27.6
Africa	38	22.3	48.1	35.7	22.4	18.9	25.0	15.7	25.6
Eastern and Southern Asia	18	6.8	13.6	6.7	0.0	90.9	79.3	80.3	82.6
Western Asia	15	18.5	52.3	86.8	59.6	36.9	15.8	9.7	9.4
Memorandum items:									
Least developed countries	40	11.3	32.8	32.9	29.6	30.5	33.0	24.3	42.2
Sub-Saharan Africa	31	23.1	42.4	40.0	28.9	14.8	18.9	9.6	19.6

Source: UN/DESA, including population estimates and projections from *World Population Prospects: The 1998 Revision* vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.99.XIII.9).

[a] Preliminary estimates
[b] Forecast, based in part on Project LINK.

the offing over the near term. The number of such countries and the proportion of the population of developing countries achieving this benchmark are expected to rise only to 29 and 63 per cent, respectively, in 2000. Meanwhile, the number of countries that are forecast not to increase per capita GDP in 2000 will drop, but only to 20, with the share of the population thus affected remaining at about 7 per cent. Almost half the countries monitored, accounting for about 30 per cent of the population of the developing world, will increase per capita output by less than 3 per cent. On these expectations, despite the relatively optimistic outlook for the world economy, it is unlikely that there will be a major dent in poverty in most developing countries in the near future.

SOURCES OF STRENGTH OF THE EXPANSION

The current strength of the global economy has various origins. Some are cyclical in nature, and will fade in the near term as the business cycle progresses through its upturn. Others reside in changing foundations for economic development in the world economy, and are therefore more durable and potent over the longer term, offering the potential for higher global growth in the medium run.

One major cyclical factor has been the rapid economic recovery in many of the developing countries and economies in transition that were most adversely affected by the 1997-1998 financial crises. Their economic recession bottomed out or stagnation was halted in the course of 1999. The rapidity and intensity of the early phases of the recovery in a number of the crisis countries were surprising, given the widely held feeling in the international community and the countries concerned that the financial crises had led them into a deep trough.

The strong economic performance of the United States of America over nearly a decade has been another major factor behind the strengthening global economy. Overall demand in the United States has been driven primarily by domestic consumption and investment and so has exerted a positive pull on external demand for a number of other countries. Although the "new economy" (see below) may have raised its sustainable rate of growth, the United States is unlikely to be able to continue providing an external stimulus of the magnitude of recent years over the medium term.

An important long-term force behind the current global economic expansion, and particularly that of the United States, has been the diffusion in depth as well as in breadth of the new ICTs. Driven by accelerating innovations in these sectors, including personal computers (PCs), the Internet and telecommunications, many economies have seen a marked rise in investment spending in ICT-related equipment and software. To date only the United States, which is at the cutting edge in many ICT sectors, has produced macroeconomic statistics that illustrate persuasively the significant impact of the ICT revolution on productivity. This has given rise to a number of questions centering around the creation of a "new economy"; notably concerning the sustainability of strong productivity growth; and the potential for spreading the new economy to other economies, which might dramatically change the landscape for the strength of economic activity in the global economy as a whole. These issues are addressed in the annex to the present chapter.

World economic growth

Major world economic trends have not diverged significantly from those projected in the last two overviews by the United Nations Secretariat.[1] However, three differences need to be stressed. First, monetary tightening in many developed economies has been stronger and faster than anticipated. This stems from the acceleration in growth in the United States and from the fact that central banks of other developed countries felt the need to match, at least to some extent, the increases in interest rates that the Federal Reserve (Fed) had introduced as a result. Second, the prices of oil increased to levels that were significantly higher than foreseen. Third, the impact of the year 2000 date conversion problem of computers (Y2K) was much less than generally expected.

The developed economies have been leading the current global economic upturn. Growth in GDP for this group is expected to be 3 per cent in 2000, up from 2.6 per cent in 1999. A common feature among these economies has been the acceleration of investment spending in ICT sectors and on ICT hardware and software in many other sectors. This component of demand has increasingly become the most dynamic driving force of the upswing in these economies, most spectacularly in the United States.

The economic performance of the United States over the past few years has been unprecedented in its recent history. In April 2000, the upswing extended its record for the longest period of continued economic expansion—109 months in a row. It is not only the length but also the strength of the current expansion in the United States, with low inflation and low unemployment, that has been confounding both observers and policy makers. Of particular surprise were the acceleration of GDP growth to an annualized rate of 7.3 per cent during the fourth quarter of 1999 and another strong performance (5.4 per cent at an annual pace) in the first quarter of 2000. As of May 2000, none of the conventional signs of a maturing business cycle were discernible on the horizon of this "ageing" cycle.

The prevailing tight labour market and the tightening of monetary policy in the United States, together with accumulating external imbalances that need to be contained, are setting limits to the continuation of this rapid growth. No significant signs are pointing to an imminent and sharp downturn in the economy, however. On present policies, the pace of the country's GDP growth is anticipated to be 4 per cent in 2000 and 3¾ per cent the year after.

Many other developed economies are also expected to experience growth in 2000-2001 of above 3 per cent. In the euro zone and in the broader European Union (EU) area, economic expansion has been gathering momentum since the second half of 1999, driven by exports and strengthening domestic demand, after pronounced weakness in late 1998 and early 1999. Strong external demand for EU is expected to continue in view of the broadening worldwide recovery and because exports from the members of the monetary union are enjoying a competitive edge owing to the weakening of the euro against the US dollar. Growth in other European developed economies is also robust.

In contrast, the Japanese economy remains sluggish, as the Government's large-scale stimulatory spending of the past several years has thus far failed to put either private consumption or investment demand on a self-sustained path. Despite a burst of optimism in the early part of the year, Japan recorded a recovery of only 0.3 per cent for 1999 as a whole, following the 2.5 per cent

[1] *World Economic and Social Survey, 1999* (United Nations publication, Sales No. E.99.II.C.1); and *Department of Economic and Social Affairs of the United Nations Secretariat and United Nations Conference on Trade and Development* (UNCTAD), "World economic situation and prospects, 2000" (New York, 2000), mimeograph.

contraction the preceding year. Its GDP is expected to expand only by 1 per cent in 2000 and by 2 per cent the following year. This subdued outlook owes a lot to the uncertainties stemming from the pace and depth of the ongoing corporate restructuring, although the overhang of the large and increasing public debt has also been clouding the horizon.

The economic outlook for most developing economies has become more optimistic. Progress in domestic economic reforms, though varying from country to country, and the improved international environment, notably less unfavourable commodity prices and more stable global financial markets, have been instrumental in improving the outlook. After two years of slowdown, GDP growth for the group is expected to increase from 3.4 per cent in 1999 to 5¼ per cent for 2000 and 5½ per cent for 2001, back to the rates of the pre-crisis period (see table A.4). Importantly from both a domestic and a global perspective, the two largest developing economies and those containing the largest number of the world's poor, China and India, have been growing at 6 to 7 per cent and are expected to sustain such growth in 2000 and 2001.

Growth for South and East Asian developing economies is expected to reach some 6½ per cent in 2000-2001, compared with 6.2 per cent in 1999. Most crisis-affected East Asian economies have been recovering at a robust pace, with the Republic of Korea leading the group at a record 10.7 per cent in 1999. Other economies in the region performed well too, with only Indonesia yet to embark upon a strong recovery path; this may come to pass in 2000, after virtual stagnation in 1999.

The strength and pace of these recoveries stem from stimulatory domestic policies and improvements in international trade. As the recovery in these economies exhausts the slack in production capacity generated during the crises, the pace of growth is likely to moderate. While external demand is expected to remain buoyant in the years ahead, macroeconomic policy stimulus cannot be continued indefinitely and further expansion in these countries depends crucially on investment in infrastructure and education and by the private sector. Some of these economies are positioning themselves to benefit from the ICT revolution, especially in semiconductors and broader computer hardware and software. The technological gaps in these economies, as compared with the leading developed economies, should provide an impetus to investment and thus to economic buoyancy for some time to come.

A rebound in Latin America and the Caribbean is anticipated in 2000-2001. After virtual stagnation in 1999, GDP is expected to register 3¾ per cent growth in 2000, with a further acceleration to 4¼ per cent in 2001. The slowdown in 1999 stemmed from the recession that several countries had experienced in the first half of the year. These recessionary experiences had varying origins, including the crisis in Brazil early in the year, the contraction of intraregional and other trade because of lack of demand and weakness in non-fuel commodity prices, the tightening of financing conditions, and necessary temporary restrictive domestic policy responses. The region's performance, though dismal for many economies, particularly in South America, was better than earlier feared because Brazil managed to avoid a widely expected sharp contraction and Mexico and most of the Central American and Caribbean countries grew relatively strongly.

With stronger growth and improved external financing conditions for Latin America, exports and investment are expected to set the pace of growth in the region. However, high levels of unemployment and tight credit in several economies may hold down growth in domestic demand. Fiscal retrenchment, political uncertainties and social unrest in some economies are also likely to restrain growth.

Prospects for economies in Africa and Western Asia have improved in general, but economic performances were highly divergent. While net fuel exporting economies in these regions benefited from the surge in oil prices, countries producing non-oil commodities faced less favourable conditions. Even for the oil-producing economies, the strong rebound in the prices of oil in 1999 benefited in the first instance fiscal revenue and external balances; it made much less of a direct contribution to real GDP growth, in part because of reduced oil production. Despite an anticipated moderation in the prices of oil towards the end of 2000 and into 2001 (see chap. II), growth in Western Asia is forecast to accelerate from the 0.5 per cent recorded in 1999 to 4 per cent in 2000 and to 4¾ per cent in 2001.

After slow growth in 1998-1999, GDP for Africa is expected to increase by 4¼ per cent in 2000 and 4½ per cent in 2001; this is also the forecast for sub-Saharan Africa (excluding South Africa), suggesting an improvement of some 1½ per cent per year in per capita GDP in that subregion, although country performances remain highly differentiated.

Recent developments in the Baltic region, Central and Eastern Europe, and the Commonwealth of Independent States (CIS) have also been positive, underpinning a moderately optimistic outlook for the group. Growth is expected to be 3¾ per cent in 2000, compared with 2.1 per cent for 1999. A firm recovery is under way in the Baltic and the Central European economies, boosted by increased exports, rising investment, and more foreign capital inflows. Conditions in the South-eastern European countries remain subdued, however. For the group as a whole, GDP growth is expected to accelerate from 1.2 per cent in 1999 to 4 per cent in 2000 and to 4½ per cent in 2001.

The macroeconomic performance of the Russian Federation in 1999 turned out to be better than anticipated throughout much of 1999, thanks to increasing oil revenues and the competitive advantage domestic producers enjoyed from the steep rouble devaluation in August 1998. The country is expected to continue to grow in the near term, with an acceleration to 4 per cent in 2000-2001 from the 3.2 per cent in 1999 (see table A.3). This should continue to yield favourable spillovers for the neighbouring countries that still depend on the Russian Federation for much of their external demand. Broadening the recent and anticipated performance of the Russian Federation into a recovery that would be sustainable over the longer haul remains, however, critically dependent on the country's undertaking a range of incisive structural reforms. Bringing about such reforms poses a formidable challenge in and of itself, but the policy makers' task is even more complex since considerable political and social challenges will need to be addressed while waiting for the reforms to yield benefits in terms of rising incomes and sustained growth.

Inflation remains under control

In spite of the acceleration in the pace of output growth and the sharp rise in oil prices, inflation worldwide remained under control in 1999. The short-run inflation outlook continues to be benign, in spite of some slight acceleration in late 1999 and early 2000. Inflation trends across countries are far from uniform, however.

For developed economies, the disinflation observed in the past decade seems to be over. Most countries in this group came close to price stability in 1998-1999, but have since seen a slight increase in inflation rates (see table A.8). While the headline inflation indices in some of these economies started to rise notably at the beginning of 2000, mainly because of the surge in energy prices, the core inflation indices, which exclude the prices of food and energy, remained subdued. This suggests that so far there has not been a pass-through of the increases in energy prices into the prices of other goods and services. With oil prices' having softened somewhat, pressures to reflect the increases in oil prices, notably in negotiating wages, have been weakening. However, if subsequent wage negotiations and price adjustments result in redress for the fall in real incomes and profits caused by higher energy prices, there might be an appreciable impetus to inflation.

Many factors that worked together in the past to keep inflation at bay in developed economies are expected to remain operative, at least for the next few years. These factors include disciplined fiscal policy, increased international competition, and vigilant monetary policy. Tight labour markets in some economies, especially in the United Kingdom of Great Britain and Northern Ireland and North America, have gradually elicited somewhat higher inflationary pressures in the form of increases in nominal wages in some sectors. However, improved productivity resulting from further technological progress is likely to hold unit labour costs in check, thus keeping a lid on inflation. As a result, inflation rates in most developed economies are expected to move up only slightly, from below 2 per cent in 1999 to above 2 per cent in 2000-2001, but are expected to remain below 3 per cent in all countries.

Such forecast inflation rates do not seem to pose a major threat to economic stability. Nevertheless, although the reaction function of monetary authorities in major countries is not spelled out in their publicly disclosed rules, inflation rates are nearing the point for policy action. In a number of countries, the monetary authorities took pre-emptive action in late 1999 and early 2000 to avert any marked uptick in inflation. To date, however, the acceleration of inflation is largely an expectation rather than something visible in reported inflation indices.

Inflation is expected to decline further in many developing countries and economies in transition in 2000. Economies with double-digit inflation rates in 1999, such as the Russian Federation, Turkey and a few Latin American countries, are expected to compress inflation. For developing countries as a whole, however, inflation is expected to rise slightly in 2000 from the 7 per cent estimated for 1999, largely on account of further price-level adjustments in Latin America and the Caribbean, as well as in Western Asia (see table A.10). On the other hand, inflation in economies in transition should revert back to 1998 levels—about 20 per cent on average (see table A.9). Inflation in the CIS countries

more than tripled in 1999 on account of slippage in several States but should fall to about one third that level in 2000.

Many emerging market economies succeeded in reducing inflation in 1999. This was especially pronounced in Asia, where inflation fell significantly in many economies on account of excess capacity, international competition and, in some cases, appreciation of the currencies that had been sharply devalued during the crises. Many Asian economies registered near-zero inflation in 1999. With slack capacities' becoming exhausted, in many emerging market economies further economic expansion is likely to increase inflationary pressures in some cases, although inflation is not expected to be a major problem in these countries in the near term.

In a few economies, mainly Argentina, China, Hong Kong Special Administrative Region (SAR) of China, and Japan, weak effective demand caused mild deflation in 1999. This has shown some sign of easing, especially since the beginning of 2000, as a result of reflationary policies and the pickup in the pace of economic activity.

Improving employment prospects

Global labour markets have improved, although less rapidly than global output because demand for labour usually rises with a lag after economic expansion takes hold. The outlook suggests, on the whole, continued improvement in employment, although there are sharp contrasts in labour markets in various countries and among regional groups.

In the United States, unemployment has fallen to levels not seen since the late 1960s (see table A.7). In contrast, given its nearly stagnant economy, unemployment in Japan has continued to increase. More lay-offs appear inevitable if the needed financial-sector and corporate restructuring continues.

In Western Europe, there has been some steady improvement in unemployment and further gains are expected. By the end of 1999, unemployment in the euro area dropped below 10 per cent for the first time since 1992. Expectations in the European Commission are that EU will create 4 million new jobs during 2000-2001, which would reduce unemployment from 16.3 million at the end of 1999 to 14.4 million at the end of 2001. Nevertheless, unemployment in Western Europe is likely to remain above 8 per cent for several years. The comparatively small improvement suggested by these numbers underlines that the cyclical improvement under way cannot solve the structural problems characterizing European labour markets. Labour-market reforms should therefore continue to rank high in the policy agenda. Progress over the medium term seems feasible, given recent policy commitments.[2]

The crisis-induced rise in unemployment in developing countries and economies in transition has finally peaked in some cases and started to fall in others. In Asian developing economies, the strong expansion is expected to reduce unemployment further in 2000-2001. Nevertheless, unemployment rates in the crisis-hit economies remain well above their pre-crisis levels. In Latin America, unemployment in some countries is still rising, while levels of unemployment in the formal sector in Africa continue to be substantial. Continuing corporate restructuring is expected to dampen the improvement in employment in the near term.

[2] The spring special session of the Council of the European Union (Lisbon, 23 and 24 March 2000) paid attention to policies to create jobs and upgrade labour quality.

In China, lay-offs of workers from State-owned enterprises (SOEs) rose in 1999, resulting in a net cumulative total of 6.5 million such individuals who have not found official re-employment. Further restructuring of SOEs remains a high policy priority in modernizing the Chinese economy; accession to the World Trade Organization will strengthen this need. Further substantial shedding of labour by SOEs must therefore be expected.

With intensifying international competition in ICT sectors in particular, a shortage of skilled labour has become a common structural problem for both developed and developing economies. Several developed countries have recently loosened their immigration policies by introducing (as in Germany and the United States), or by contemplating the introduction of (as in the United Kingdom), special temporary immigration quotas for ICT specialists. These moves will encourage brain drain from the developing countries, further reducing their already scarce supply of skilled labour and slowing the pace at which these countries can narrow their technological gap relative to developed economies.

THE POLICY ENVIRONMENT IN 1999-2000

Macroeconomic policy measures have been crucial in stimulating recovery from the recent international financial crises and in deepening and broadening that recovery to include a growing number of countries. As many economies are now entering an expansionary phase, the role of macroeconomic policy will be to maintain an appropriate pace of output growth, while keeping inflation within a safe range. At the same time, policy makers worldwide are facing many new challenges resulting from increased global economic integration, rapid technological innovation, and economic restructuring.

In certain developed economies, the combination of strong output growth with low inflation and unemployment suggests a decoupling of the links that have traditionally prevailed among those variables when the economic cycle matures and slack capacity begins to be exhausted. This decoupling is most pronounced in the United States and has given rise to the concept of the new economy (see annex).

In many emerging market economies, the international financial crises of the late 1990s prompted changes in the institutional framework for economic policy. Examples are the changes in exchange-rate regimes, the improvements in the rules and instruments for monetary policy, and the reforms of banking and financial systems. These and other changes have altered the channels through which financial policies affect real economic sectors.

Monetary policy

There has been a shift in the monetary policy of the central banks in many developed economies since mid-1999. Led by the United States Federal Reserve, most of these central banks started to reverse the easing of policy that they had implemented at the height of the financial crisis, and have since tightened monetary conditions further. By April 2000, the United States Federal Reserve had raised interest rates five times for a total of 125 basis points. The

central banks of most other developed economies also raised rates, from 75 to 125 basis points, over the same period.

Core inflation rates in these economies have edged up only slightly so that most tightening so far has been pre-emptive. Nevertheless, further rises in interest rates are likely, according to the policy statements of many central banks. In the forecast presented here, it is assumed that there will be further rises in interest rates in the year 2000 of 50 basis points for the United States, 75 basis points for the euro area, and 50 to 75 basis points for other developed economies except Japan. Japan is an exception among these countries because, in the light of the hesitant Japanese economic recovery, it is assumed there will be no tightening for the rest of 2000 of the near-zero interest rates that the central bank has maintained since early 1999.[3]

As a practical framework for monetary policy, several developed countries have adopted the practice of inflation-targeting since the early 1990s. The developed economies that have embraced this policy framework, usually after failures in targeting either money supply or the exchange rate, have in general been successful, as their inflation has remained fairly stable in the last decade.[4] More recently, a number of developing countries have adopted inflation-targeting, despite a number of questions regarding its effectiveness, particularly for countries undergoing structural and institutional changes, and its costs and benefits (see box I.1).

In contrast to the monetary tightening in most developed economies, interest rates in many developing countries and economies in transition have remained virtually unchanged in 1999 and early 2000, although some of these economies have lowered their policy interest rates from the high levels adopted in the early stages of the crisis. This suggests a decoupling of nominal interest rates in the developed and developing countries. There are various reasons for this: the lagged growth cycle in many emerging market economies; the former high levels of interest rates in some of these countries, especially in real terms; the greater, though still limited, degree of independence gained for monetary policy in the many countries that have embraced floating exchange-rate regimes; and the improved international and domestic financial conditions in many countries.

In the forecast for 2000, no substantial changes in interest rates are expected for most developing countries and economies in transition. A few Asian economies that are recovering at a strong pace, such as Hong Kong SAR (also because of its adherence to a rather rigid currency board), the Republic of Korea and Singapore, are expected to enact small increases in interest rates, while some Latin American economies are likely to cut their high interest rates to underpin the gathering momentum of their recovery. Rising external imbalances in a number of economies in transition, especially those most advanced with their structural transformation, limit the ability of policy makers to reduce their high interest rates for fear that their economies overheat. In contrast, the CIS economies that are expected to reduce their inflation rates markedly should be able to bring down nominal interest rates.

[3] However, a monetary policy announcement in mid-April 2000 suggested that the near-zero interest-rate policy might be abandoned before the end of 2000 (see *Financial Times*, 13 April 2000, p. 4). This possibility was strengthened by a discussion of monetary policy by the governor of the Bank of Japan (see *Financial Times*, 19 May 2000, p. 1).

[4] However, the 1990s have been a period of disinflation throughout most of the world economy. It is therefore not necessarily the case that direct inflation-targeting has been responsible for the success in controlling inflation, nor that the previous practices would have failed under such circumstances.

Box I.1.

INFLATION-TARGETING

In the past decade, a number of central banks in developed market economies have adopted "inflation-targeting" as a monetary policy regime. More recently, it has been suggested that those developing countries and economies in transition that shifted from fixed exchange-rate regimes to floating regimes—thereby forgoing the fixed exchange rate as the anchor for monetary policy—should adopt inflation-targeting as their new monetary policy regime. A few have done so, fuelling a debate on the subject.

There is a broad agreement that low inflation is good for growth and equity in the long run. The aim of inflation-targeting is to contain inflationary expectations and enhance accountability regarding monetary policy by setting a numerical target for the inflation rate over the medium term. The effectiveness of inflation-targeting in achieving these objectives depends on the nature of the disturbance to the economy. In the case of a demand shock, inflation-targeting acts like an automatic stabilizer because the shock pushes both prices and output in the same direction and the action taken to stabilize inflation will also be appropriate for output. This underlines the importance of responding symmetrically to expected deviations from the inflation target.

The policy responses to supply shocks are more problematic. A negative supply shock will lead to higher prices but lower output. Under such circumstances, a deflationary policy aimed at slowing inflation would exacerbate the negative output effect. As a result, the objectives should be to accommodate the initial effects of supply shocks to some degree and to minimize the feed-through into expectations and wage and pricing behaviour. To some extent, this can be accomplished by slowing the rate of convergence to the inflation target, thereby smoothing the contractionary effects of policy on output. In addition, the design of the policy framework can be tailored to further smooth the output effects. Finally, the credibility of the policy stance can help. If the public's long-run inflation expectations are firmly anchored to the inflation target, any deviations will be viewed as temporary, so that the feed-through should be minimal.

In practice, inflation-targeting embodies five key elements: (a) the public announcement of a numerical target for inflation and the time-horizon over which it must be achieved; (b) an institutional commitment to price stability as the primary goal of monetary policy; (c) reliance on a variety of types of information, not only monetary aggregates or the exchange rate, for deciding on policy; (d) increased communication with the public and the markets about the plans, objectives and decisions of the monetary authorities; and (e) accountability of the central bank for attaining its inflation objective. Within this framework, a number of practical issues need to be addressed.

First, a reference price index must be chosen, either a headline inflation figure, such as the consumer price index (CPI), or some measure that reflects the trend in inflation by excluding volatile items, particularly those that are subject to supply shocks (such as food and energy).[a]

Second, the authorities need to select either a point or a range target. A range leaves some flexibility in responding and it communicates to the public that there is some uncertainty of control. It does not necessarily reduce the probability of falling outside the range, however, and this could affect credibility if economic agents believe a range to be more credible than a point target. The choice of values for either the point target or the end points of the range involves a trade-off between the benefits of low inflation and the

[a] If the selected index is unfamiliar to the public, policy makers may need to furnish an explanation.

Box I.1 (continued)

dangers of inadvertent deflation. Most central banks that use inflation-targeting allow for an inflation measurement bias of about 1 per cent and for a safety margin, resulting in a central target of between 1 and 3 per cent and a range of about 2 percentage points.

Third, determining the time-horizon for reaching the target is crucial. A short horizon places most weight on the inflation objective, while a medium-term horizon conveys concern for other policy objectives. A sequence of short- to medium-term inflation targets, in addition to a long-term target, would communicate to the public that the central bank will exercise its discretion in dealing with exceptional circumstances, but that there is a precise time path for bringing inflation to the long-term goal.

Fourth, guidelines on possible escape clauses need to be elaborated. These might take the form of a contingent target or range that could be used when dealing with, for example, a supply shock (such as a deterioration in the terms of trade).

Finally, under exceptional circumstances, it might be possible to change the specification of the goal, such as the variable targeted (perhaps by excluding some additional items), the span of the range, or the numerical target. This possibility needs to be carefully weighed against the potential loss of credibility; how it would then be carried out and under whose authority will depend on the degree of independence of the central bank.

An inflation-targeting framework is not universally appropriate and the circumstances of individual countries need to be carefully considered. First, inflation-targeting requires that the central bank enjoy a minimal degree of independence in conducting monetary policy, at least in choosing its instruments. Second, monetary policy must be independent of fiscal policy and the latter must also be conducted responsibly. Monetizing fiscal deficits should be precluded.

Moreover, the country must be willing and able to subordinate all other macroeconomic policy goals to that of stable inflation. This implies a flexible exchange-rate regime in order to ensure that there is not an exchange-rate goal that conflicts with the inflation goal. It is therefore crucial that the economy be able to withstand exchange-rate shocks. This is not the case for countries with large external debts denominated in foreign currency, for example.

Introducing inflation-targeting also needs appropriate starting conditions. The most crucial is the state of inflation because it gives an indication of the stability of the overall economy. Gaining credibility is an important objective so that it is important to start inflation-targeting at a time and in a state when initial success can realistically be expected. If inflation is initially high, control is difficult and there is a likelihood of failing to achieve the target. Success is more likely when inflation is already low or declining. Without such success, the credibility of the monetary authorities will be rapidly eroded and not easily regained. In countries undergoing major structural change, relative prices necessarily have to change and it may be especially difficult to establish a realistic inflation target and meet it under those conditions.

Inflation-targeting is a demanding monetary policy framework. It may be suitable only for some developing countries and economies in transition, and then only after considerable preparatory work.

Fiscal policy

As a result of the strengthened economic growth since mid-1999, there have been notable cyclical improvements in fiscal balances in many developed economies, as well as in several developing countries and economies in transition. The large government surplus in the United States has continued to rise, reaching over $150 billion in 1999. In several other developed economies, fiscal deficits have declined or have switched from deficit into surplus. The budget deficit in almost every EU member is now below the threshold of 3 per cent of GDP specified in the Stability and Growth Pact. For most of these countries, the need of Governments to borrow is shrinking, entailing major changes in the structure of bond markets in some cases.

By contrast, the recession of 1998, the present nearly stagnant economy and the large amounts of government stimulus spending over two years have led to huge budget deficits in Japan (nearing 10 per cent of GDP in 1999). After implementation of the late 1999 supplementary budget, Japan's public debt is expected to be the highest in terms of GDP—some 130 per cent—of any developed country.

In the forecast, fiscal policy in most developed economies is expected to remain restrained. Tax cuts have been proposed or already approved in the 2000-2001 budgets for a number of these countries, but the fiscal positions of most Governments are expected to improve further as the economic expansion strengthens. In Japan, taking into account the package approved at the end of 1999 for implementation mainly in early 2000, fiscal policy is likely to be slightly stimulatory in 2000-2001.

Fiscal positions in many developing countries and economies in transition have also improved to varying degrees for a number of reasons. The surge in oil prices has brought windfalls to government revenues of many oil-producing economies. The strong recovery in many of the crisis-affected countries, particularly in Asia, has compressed the large budget deficits that were a concomitant of the fiscal stimuli introduced to counter the calamity. In several developing countries and economies in transition with high levels of public debt, lower interest rates have reduced government interest payments. Nevertheless, fiscal balances in the majority of developing countries and economies in transition remain in deficit, in a number of cases above 5 per cent of GDP. Fiscal consolidation is expected for most of these economies in 2000-2001.

Exchange-rate developments

The exchange rates of most currencies were relatively stable over the course of 1999 and early 2000. Although no sharp fluctuations in foreign exchange markets are assumed in the forecast, the risk of a larger-than-expected weakening of the United States dollar against other major currencies remains, given the massive external deficit and the possibility of a major fall in equity prices in the United States.

The euro depreciated 25 per cent against the United States dollar in the 16 months following its debut in 1999. This depreciation was partially in response to the sizeable differentials in GDP growth rates and in interest rates between the United States and the euro area; it was also a result of the appreciation of

equity markets in the United States relative to those elsewhere, which in turn partially reflected expected growth differentials. With the pace of economic expansion in the euro area picking up, a mild recovery of the euro over the course of 2000-2001 is expected.

The exchange rate between the Japanese yen and the United States dollar has also been driven to some extent by the even larger growth differential between the two countries. The yen initially strengthened against the United States dollar during 1999 when the expectation of a recovery in Japan was high. It then retreated towards the end of the year when the Japanese economy recorded two quarters of decline, reversing earlier expectations. In the forecast, the yen is expected to hold its level against the dollar, consistent with the modest growth projected for Japan and the rising interest rate differentials in favour of the United States dollar.

After the large devaluations and the volatility in the currencies of many emerging market economies between mid-1997 and early 1999, many of these exchange rates stabilized. While a few currencies in Asia and Latin America, most spectacularly the won (Republic of Korea), have since appreciated somewhat, most have stayed at or near the lows incurred as a result of the devaluations.

As a contrast to such developments, the Russian rouble, the Kazakh tenge, the Ukrainian hryvnia and the currencies of several other economies in transition have continued to drift downward. Exceptions to this downward trend are offered by countries that have adopted a rigid exchange-rate regime, such as a currency board, or undertaken, as in the case of Latvia, emulation of the rules of the currency board. Several of these arrangements came under pressure following the fallout of the Russian crisis, but all countries adhered to their currency board-type arrangements, if sometimes at the cost of larger domestic adjustments than might otherwise have been required.

While some emerging market economies are continuing to use fixed exchange-rate systems, many have moved to floating regimes, or have been forced to do so by financial crises. The selection of an exchange-rate regime should not be seen as separate from the policy framework and the structural adjustment needs of any given economy, however. Those that have changed to floating rates have more freedom in conducting their monetary policy than economies that continue to adhere to fixed exchange rates, but have forgone their nominal anchor for monetary policy. In order to maintain low inflation and a stable exchange rate, some emerging market economies with a floating exchange-rate regime have adopted inflation-targeting as their monetary framework (see above).

RISKS AND OPPORTUNITIES IN THE CURRENT SITUATION

Particularly with the possibility of a continuation and broadening of the benefits of the new economy, the underlying outlook for economic growth at the aggregate and regional levels is optimistic. Nevertheless, several caveats need to be taken into account. First of all, the economic recovery in crisis-hit countries and the prolonged growth cycle in some developed countries are accompanied by a legacy of large fiscal and current-account imbalances in many economies. These imbalances need to be lowered and, in some coun-

tries, reversed in the medium to longer run. The most critical are the massive trade deficit of the United States and the substantial fiscal deficits in Japan and several emerging market economies. In the former case, the United States is steadily increasing its foreign liabilities, already the highest in the world. In the case of Japan, the fiscal deficits are raising domestic public debt which, in turn, is the highest among developed countries. These two deficits (as well as fiscal imbalances elsewhere) should shrink as economic expansion continues and becomes more widespread. In the meantime, these imbalances pose a potential threat because a crisis of confidence in either would disrupt financial markets, reduce growth in the United States and Japanese economies and have a wide array of ripple effects that would be to the detriment of the world economy as a whole.

The trade imbalance in the United States reached about $350 billion in 1999, some 4 per cent of GDP, and has been growing since. Japan and Western Europe, on the other hand, have large trade surpluses. These imbalances have developed over the past several years mainly as a result of the widening differentials in growth rates across countries, owing notably to the strong performance of the United States. The latter also gave rise to a strong United States dollar, large increases in equity prices in the United States and large capital inflows (which financed the country's trade deficit).

A shock could reverse this virtuous interaction. The economic recovery in emerging markets, the higher growth in Europe or a further fall in prices in United States equity markets could reduce the inflows of capital to the United States, putting pressure on the exchange rate, the trade deficit or both. A depreciation of the dollar would, after a lag, contribute to the correction of the trade deficit, but it would also have inflationary effects and would probably be countered by a rise in official interest rates. This would further reduce growth in the United States which, coupled with the correction of the trade balance, would have a negative effect on the rest of the world economy.

A slowdown in the United States, particularly if accompanied by a depreciation of the dollar, would be especially critical for Japan where policy makers already face a dilemma. There is a need to cut the large government deficit but the recovery in the private sector, both in consumption and in investment, continues to be fragile. More fiscal stimulus might be necessary to increase private demand, but would place even greater stress on financial markets.

Although the high rates of growth in the United States have not yet resulted in any tangible acceleration in inflation, a second potential difficulty is the possibility that the surge in growth in late 1999 and early 2000 may have finally pushed the economy beyond its non-inflationary potential. There are signs that the labour market is tight, raising the possibility of wage increases and subsequent pressures on prices. In addition, wealth effects of the large increases in the prices of United States equities has contributed to the rapid—and potentially inflationary—increase in consumption.

As indicated above, the Federal Reserve has already taken pre-emptive action to counter the perceived inflationary threat but there is a possibility of further monetary tightening. In addition, the concern of policy makers in almost all other developed countries has also shifted to the possibility of an acceleration in inflation, with the result that they, too, are likely to continue monetary tightening. This is the first time in over a decade that all the major

central banks will be moving simultaneously in the direction of tightening monetary policy. The coordinated cuts in interest rates in late 1998 proved effective in avoiding a further deterioration in the global economy at that time, but the global consequences of a move in the opposite direction are untested under the prevailing macroeconomic environment where a number of largely intangible factors, such as investor confidence, play such a critical role. The perennial difficulty of judging when policy action is necessary is compounded by the advent of the new economy which casts doubt on the validity of some of the criteria used previously. There is a possibility that, in aggregate, the authorities may inadvertently adopt an excessively restrictive stance, with negative consequences for the world economy at large.

The high prices of equities in the United States continue to be another source of vulnerability. There has been considerable volatility in equity markets in the United States since the highs registered in early March 2000. This instability might reflect only the profound changes in the structure of equity markets that have taken place in recent years but it could also be a harbinger of a further fall in prices. If there is such a further correction in stock prices, the wealth effects on consumption, the decrease in investment, the international contagion, and the other possible repercussions would send not only the United States economy but the global economy as a whole to a much lower rate of growth.[5]

[5] The impact of a correction in equity markets in the United States and other major developed markets was discussed in the *World Economic and Social Survey, 1999,* box I.2.

There is also the possibility of a supply-side shock. Oil prices have remained volatile and have risen again since the initial drop following the Organization of the Petroleum Exporting Countries (OPEC) agreement to increase quotas (see chap. II). If the prices of over $30 per barrel observed in early 2000 were to return and persist, they could pose various threats to economic growth throughout the world. An oil-price induced acceleration in inflation in developed market economies would probably prompt further increases in interest rates, slowing growth in these countries. This would have negative consequences for the rest of the world, similar to what happened in the global economic slowdown at the beginning of the 1980s.

Another concern is that the strong economic recovery in many crisis-hit economies has to some extent deflected attention from the structural problems that, at the height of the crises, were emphasized as key causes. Policy makers have more recently allocated diminishing attention to resolving these structural problems, as well as those that resulted from the crises. Thanks to these economies' recovery, some of the problems caused by the crises—high unemployment, large budget deficits, and debt problems in the private sector—have been alleviated. However, these cyclical gains are not a substitute for the restructuring of, for example, the still fragile financial and corporate sectors in many of these economies.

Finally, the world economy continues to face the systemic threat that the reform of the world financial architecture is incomplete. There has been considerable progress in enhancing transparency, strengthening regulatory activities and improving internal financial controls within firms. However, there has been less success in ensuring that international public and private actors will be able to handle the next financial crisis when it occurs. The present optimistic outlook should not be allowed to dilute efforts to remove this sword of Damocles.

On the other hand, there could be an upside to the forecast. If the wave of benefits from ICT was to spread itself more widely among developed and emerging market economies, the benefits that the United States economy has recently reported would cumulate and help to sustain a faster pace of economic expansion in the short to medium run. In order to accelerate growth and reduce poverty and unemployment, higher levels of investment, both domestic and foreign, are required. The improved economic environment, particularly if reinforced by continued economic reforms, should facilitate higher investment, while the ICT revolution offers opportunities for investment productivity that should raise both overall economic growth and personal well-being in developing countries.

National Governments and the international community should focus on the potential of the "new economy" to raise productivity levels in developing countries and economies in transition. The virtuous circle in the United States has involved a growth-oriented process of adjustment from the "old economy" to the "new economy", whereby the population at large has benefited, albeit not equally. The objective should be to emulate this virtuous circle elsewhere. For this, sound pro-growth domestic policies that encourage the private sector to seize the opportunities offered by ICT are indispensable.

However, historical experience shows that market forces by themselves are unlikely to distribute the benefits from global economic integration and technological innovation equitably across nations or among different groups within countries. Globalization and the ICT revolution have provided many countries with more opportunities to raise incomes and living standards but they are also among the factors that have led to growing inequality both domestically and internationally, with the group of poorest countries being further marginalized. Many countries not yet affected by the ICT revolution may find it difficult to catch up if they have to rely solely on their own resources. Drawing again on the experience of the United States, one consequence of its faster growth has been increased public revenues which give the Government the opportunity to address the needs of those who are otherwise excluded. Similarly, at the global level, sound domestic policies need to be complemented by enhanced global action, particularly increased technological and resource transfer from developed economies to developing countries and the poorer economies in transition, if the potentially divisive effects of ICT and the new economy are to be avoided.[6]

[6] For a detailed programme of proposed actions at the national and international levels and by the United Nations system, see the report of the Secretary-General (E/2000/52) on development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy. Further suggestions are contained in *Poverty amidst Riches: The Need for Change* (report of the Committee for Development Policy on its second session) (United Nations publication, Sales No. E.00.II.A.4). The report of the Committee is issued as *Official Records of the Economic and Social Council, 2000, Supplement No. 13* (E/2000/33).

ANNEX

EMERGENCE OF THE "NEW ECONOMY"

After the recovery from the recession of the early 1990s, the prevailing view was that the United States economy would return to its traditional medium- to long-term average rate of growth of between 2 and 2.5 per cent. It was thought that growth above this rate would trigger inflation, partly because of capacity constraints and wage pressures, and could not be sustained.

Contrary to these expectations, in the second half of the 1990s the United States economy has consistently expanded faster than this previously assumed non-inflationary growth rate (see table A.2) yet inflation has decelerated (see table A.8), reaching one of the lowest rates in the past 30 years. In addition, the unemployment rate has declined steadily to almost 4 per cent (see table A.7).

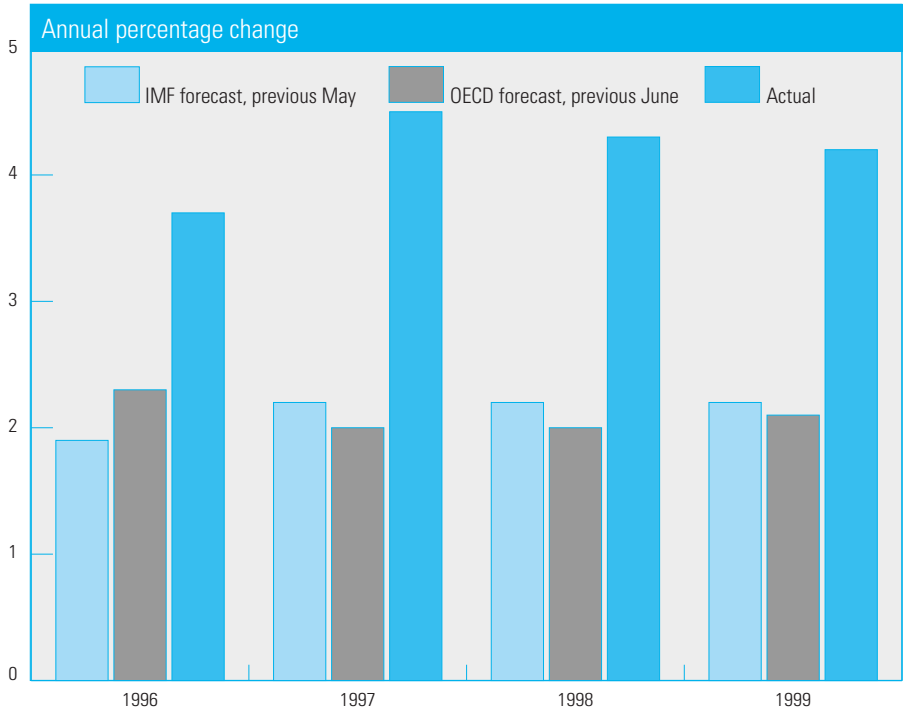
During this period, forecasts persistently underestimated the rate of growth in the United States (see annex figure I.1), suggesting that there have been changes in the functioning of the economy that are not fully understood.[a] These new mechanisms have been referred to as the "new economy".

The nature of the new economy

The new economy is the fusion of primarily three simultaneous phenomena—rapid technological progress in the computer and communications industries, the internationalization of the United States economy, and changes in the

[a] Although the *World Economic and Social Survey* traditionally has not included forecasts for the following year, the forecasts of Project LINK also consistently underestimated the growth in the United States economy in this period. However, referring to the second half of the 1990s, the *World Economic and Social Survey 1994* (United Nations publication, Sales No. E.94.II.C.1 and corrigendum) stated (chap. I; subsect. entitled "Outlook for the world economy: the second half of the 1990s") that changes in the world economic landscape pointed to a combination of forces that had rarely been present since the early 1970s; that in the developed market economies economic policies were more balanced; that fiscal consolidation rather than benign neglect of fiscal deficits was the preferred approach; that financial rehabilitation had run its course, and the financial health of business and households had largely been restored; and that accumulated technological changes and the fact that business confidence was still improving pointed to further increases in gross fixed capital formation, making it less likely that supply bottlenecks would soon emerge to slow down the recovery. *The 1994 Survey* postulated that growth could emulate that of the period 1983-1989 when the United States economy had grown by an average close to 4 per cent.

Annex figure I.1.
FORECAST AND ACTUAL GROWTH OF UNITED STATES OF AMERICA GDP, 1996-1999



Source: International Monetary Fund (IMF), *World Economic Outlook* (various issues); Organisation for Economic Cooperation and Development (OECD), *Economic Outlook* (various issues).

financial environment. This new economic environment has encouraged and enabled economic agents to invest in the new technologies, causing them to be disseminated rapidly. The interaction among investment, growth, employment and inflation has been radically altered as a result. Since 1993, gross domestic private investment in the United States has increased faster than gross domestic product (GDP), and business investment in information technology has increased even faster.

Investment in new computer and communication technologies has affected both internal processes and external interactions in small and large enterprises. New technologies are being introduced at decreasing costs, with the prices of computers and communications falling continuously. The Internet is providing immediate access to vast arrays of information and knowledge, enabling businessmen, households and workers to make better decisions. Information on prices and sources of supply has reduced the need for intermediaries and improved the choices for buyers. The costs of inventories and administration have fallen.[b] Employees at all levels have been displaced, freeing large numbers of workers for new activities.

The internationalization of the economy of the United States—as well as of that of most countries—as a result of improved communications, declining transport costs, trade liberalization, and global financial integration has stimulated a wide range of economic activities and changed the international division of labour in many industries. In many firms, operations traditionally performed in situ are increasingly being subcontracted abroad. Internationalization has intensified competition, making price increases and the emergence of inflationary pressures less likely. Entrepreneurs' improved access to information on input and product markets applies not only to their own country but also to firms abroad. As a result, flexibility has increased and wage and other cost pressures have subsided.

Changes in the domestic financial system have been critical in enabling both domestic and foreign firms and entrepreneurs to mobilize capital for investment in the United States. The extensive application of ICT in the financial sector has reduced the costs and speed of financial intermediation. Commercial banks and non-bank financial institutions have diversified their operations and introduced a wide range of new financial instruments. Securitization and the increased marketability of many financial assets have played a key role in this process. These changes have facilitated and reduced the cost of the channelling of domestic and external funds to new-economy activities.[c] From the borrower's point of view, the result is less reliance on debt-financing and greater use of equity. In particular, even young pioneering companies are able to mobilize venture capital at very low costs and make initial public offerings (IPOs).[d] In addition, the favourable prospects have attracted large amounts of foreign direct investment (FDI) into the United States. As a result of the overall surge in investment, the rate of growth of productivity in the second half of the 1990s is now estimated to have been more than double the average of the previous 20 years.

[b] By the end of the 1990s, the inventory-to-sales ratio of non-farm business had fallen to well below the average of the 1980s and previous decades (see *Economic Report of the President,* February 2000, p. 115).

[c] Venture capital increased more than 10-fold between 1991 and 1999, while the number of companies receiving such funds more than tripled (*The Wall Street Journal,* 22 February 2000, p. C18). Dozens of corporations in the field of informatics that did not exist 10 years ago or whose capitalization was less than $10 million now have a capitalization in excess of $20 billion, in some cases exceeding $50 billion.

[d] For a description of the United States venture capital industry, see *World Economic and Social Survey 1999* (United Nations publication, Sales No. E.99.II.C.1), chap. VIII, subsect. entitled "The United States of America model".

Productivity growth as the key

The proof of the new economy depends in large measure on whether there has been an increase in productivity. This has been a controversial issue, in part because it is inherently difficult to measure productivity.

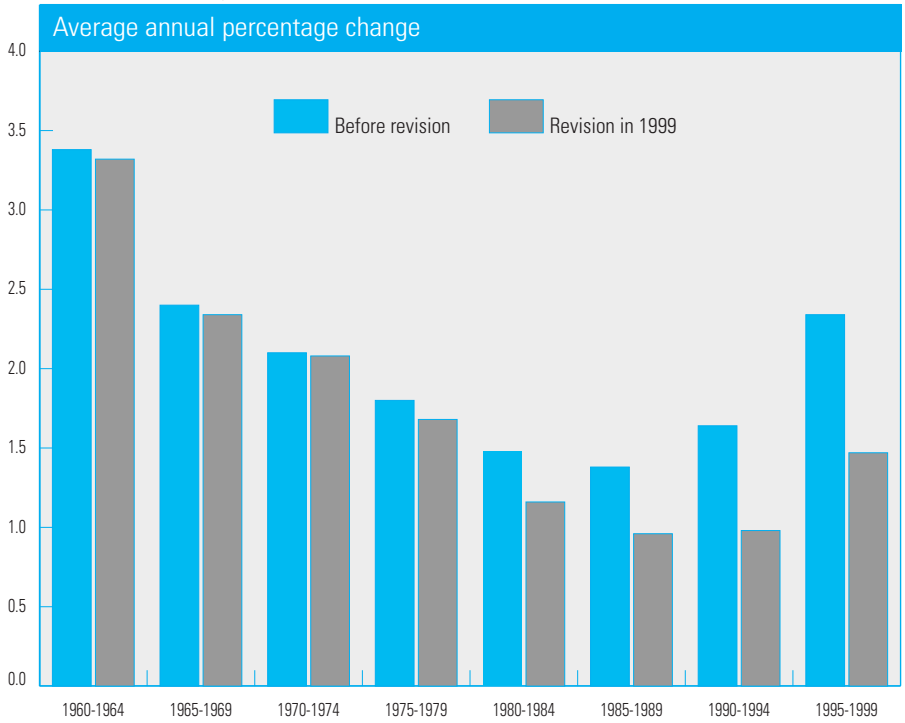
For two decades prior to 1995, compared with the 1950s and 1960s, the emergence of the ICT revolution coincided with a slowdown in economy-wide productivity growth in the United States. Three explanations were given for this paradox.[e] First, measurement errors, such as failure to adjust for improvements in the quality of output, may have resulted in an underestimation of productivity growth prior. Second, the computer sector was initially small in relation to the overall economy, so that its productivity gains were dwarfed by other activities whose productivity growth remained sluggish. Third, it takes a long time for workers to be trained and firms to be restructured, as well as to build up a critical mass of ICT throughout the economy, before its beneficial effects can be fully realized.

The most recent revision in the official statistics for the United States, which corrected some measurement errors, resulted in upward changes in past data on labour productivity (see annex figure I.2). More importantly, the data show that productivity growth since the mid-1990s has accelerated to about 2.5 per cent, double the rate observed over the previous two decades. Some studies have shown that total factor productivity (the gains in growth that cannot be explained by changes in factor inputs) has also risen since 1995 to 1.2 per cent per year, triple the 0.4 per cent average for the previous two decades.[f] Moreover, it is argued that official statistics continue to under-

[e] See *World Economic and Social Survey, 1996* (United Nations publication, Sales No. E.96.II.C.1 and Corr.1), chap. IV, sect. entitled "Investment and productivity measurement: the United States of America and the 'Solow Paradox'".

[f] Although ICT has been identified as the major driving force for the recent rise in productivity growth, capital deepening, meaning more capital per worker, and improvements in the quality of labour, through education and on-the-job training, have also contributed.

Annex figure I.2.
PRODUCTIVITY GROWTH IN THE UNITED STATES OF AMERICA, 1960-1999



Source: United States Department of Labor, Bureau of Labor Statistics.

Note: Data for "Before revision" for 1995-1999 are the three-year average for 1995-1997.

state productivity growth in many service industries dependent on advanced technology, notably ICT.

Stock markets and the new economy: a virtuous circle or a bubble?

The debate about the new economy has also focused on the booming stock markets in the United States and in other developed economies. During 1995-1999, stock markets in the United States, as measured by the performance of the Standard and Poors 500 index (the S&P 500) deflated by the consumer price index (CPI), registered an average annual real return of 24 per cent, double the average over the last century. Moreover, returns on technology stocks, as measured by the National Association of Securities Dealers, Automated Quotations System (NASDAQ) composite index, were triple the rate of return obtained in broad equity markets in 1998-1999; the rate of return for Internet stocks was more than quadruple the NASDAQ average. Although the prices of many technology stocks fell significantly after March 2000, all these indices remained high at the end of April.

The booming stock markets have been closely interrelated with rapid ICT innovations and the strong performance of the real economy, yielding a virtuous circle. Many ICT companies have been able to raise large amounts of capital for further expansion because of the dynamic stock markets, while strong equity appreciation has added to economic growth through the wealth effect on consumption demand. Many households have felt comfortable about spending most of their current incomes, relying on the increases in prices of their assets (shares and real estate) for their savings. In addition to sound economic conditions, the appreciation of equity markets has also been driven by high expectations about future profits in ICT sectors.

Traditional valuation benchmarks suggest that high share prices represent a growing "bubble" in stock markets, but the new-economy paradigm points to alternative explanations. One of these is that there has been a decline in the equity premium—the margin by which the implied rate of return on equity exceeds the rate of return on risk-free securities, such as government bonds, over a comparable period of time. One reason for this is the more propitious political and economic environment, with the end of the cold war and the long virtuous circle of economic growth. A second reason for the lower risk premium is that, by providing more encompassing and more timely information at lower cost, the ICT revolution has reduced uncertainties in many decision-making processes throughout the economy and has therefore reduced the financial risks faced by entrepreneurs and others. This has correspondingly reduced the risk premium that investors require in order to opt for equity rather than risk-free financial instruments.

Another explanation offered for the high equity prices is that they reflect the value of the intangible capital created by the ICT revolution. In an increasingly knowledge-based economy, this intangible capital (which includes intellectual property, managerial capacity and investment in human capital) should be added to the valuation of physical capital assets. According to this argument, traditional yardsticks for valuing equities, such as the price-to-book value, became less relevant for many ICT companies because of their high ratio of knowledge capital to physical capital.

Whether a jump in share valuations reflects an improvement in economic fundamentals or a bubble can be resolved only once the bubble bursts. Moreover, bubbles can coexist, for a considerable period of time, with sound underlying economic conditions. A substantial fall in equity prices would have negative short-run consequences for the world economy (see above) but the longer-term benefits of the structural changes associated with the new economy are expected to continue.

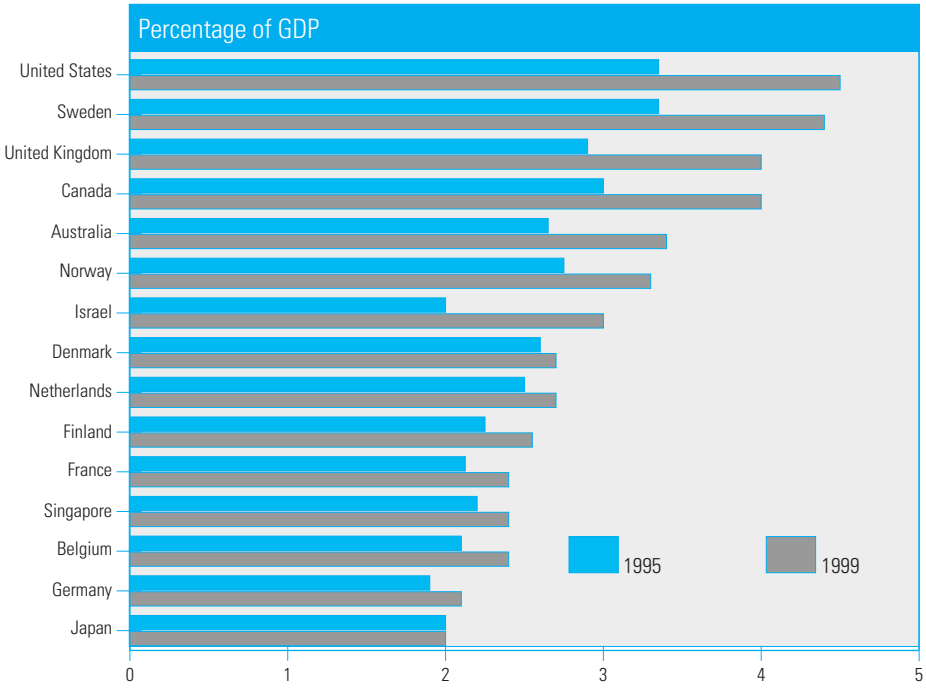
A growth opportunity for other countries?

The fundamental structural changes of recent years seem likely to sustain the new economy in the United States over the medium term. Computer-based processes, business use of the Internet and Internet-related businesses continue to spread. Firms, in general, enjoy sound financial positions and profit levels are facilitating further investment so that productivity increases in the medium term seem likely to maintain the levels of the past eight years. Overall, therefore, the United States economy appears capable of sustaining non-inflationary growth of the order of 3 to 3.5 per cent per annum over the medium term. This is a full percentage point—equivalent to $100 billion annually—more than many, until recently, considered feasible.

With growing international economic interdependence, the major forces driving the strong economic performance of the United States should mutatis mutandis be relevant to the rest of the world. The global economy would gain considerably if the productivity gains of the United States also became characteristic of other countries. There are growing signs that the foundations for such a course are being laid in a growing number of developed countries outside the United States. Stronger foundations for embracing the ICT revolution can also be expected in a growing number of developing economies—in the first instance, those in the vanguard of ICT production and exports. Expanding global economic integration provides a force for such emulation, particularly for the more advanced developing countries. This may presage the formation of a new global economic era, which should provide opportunities for sustaining strong growth throughout most of the world economy for some time into the future.

Signs of the rapid diffusion of the ICT revolution to other economies have been coming to the fore. Developed economies other than the United States have been bolstering their investment spending on ICT hardware and software, although in terms of its strength and depth, this investment lags appreciably behind that of the United States (see annex figure I.3). Some Western European economies are already at the cutting edge in certain ICT sectors (such as wireless communication technology) and some developing countries have been experiencing an ICT boom in certain sectors. For example, India's computer software industry has been growing 50 to 60 per cent annually in recent years and both the stock of personal computers owned by households and the number of Internet users in China doubled in 1998 and again in 1999. More and more countries are launching special high-tech zones. A few economies in Asia have already become the largest manufacturing centres for some categories of ICT hardware. While these were initially set up to service export markets, increasingly this capacity is being utilized to strengthen ICT production for diffusion to other segments of the domestic economies in these countries.

Annex figure I.3.
INVESTMENT SPENDING ON ICT IN DEVELOPED COUNTRIES, 1996 AND 1999



Sources: International Data Corporation; and *Business Week*, January 2000.

The experience of the United States suggests why the rise in ICT outlays has apparently not yet affected productivity elsewhere. First, ICT investments in other economies, although growing rapidly, remain comparatively small. For example, computer expenditure per capita in major EU countries is much lower than in the United States. The experience of the United States suggests that the ICT proportion of the capital stock has to reach a critical mass before it begins to impart an appreciable impetus to productivity. This is partially because the benefits of ICT depend on the size of the network that can be accessed as a result of that investment, a phenomenon well known from the spread of, for example, telephones and railways.

Other countries also lag in software and ICT services and cannot match the United States in technological inventions resulting from its high level of spending on research and development (R&D). They also have to overcome such institutional constraints as less liquid and deep financial markets, less developed venture capital networks, less flexible corporate structures and a higher degree of government regulation in certain areas (such as telecommunications). The United States has also shown itself to have a more flexible and efficient labour market which has contributed to the smooth introduction of the new technologies. Despite these constraints, growing international economic interdependence should result in the diffusion of the forces that have propelled productivity growth in the United States. However, in the absence of concerted actions by Governments, the gains to other countries will take time and are likely to be less dramatic, given the sizeable technological gaps that remain.

II THE INTERNATIONAL ECONOMY

Along with the recovery in world output growth in 1999, international trade strengthened, although with some lag. International trade grew slowly during the first half of the year, with significant declines in some regions as many economies, especially in Asia and Latin America but also among the economies in transition, continued their post-crisis adjustment by cutting import demand. As the recovery progressed and economic activity in more and more economies began to rise, international trade revived rather strongly in the second half of 1999. The present outlook is for the growth in international trade to continue to rise in 2000-2001.

Primary commodity markets are also strengthening. As a result of the earlier economic contractions, prices of major commodities, expressed in United States dollars, dropped in early 1999 to their lowest levels in decades. This contributed to holding down inflation in most developed economies and was favourable to other commodity-importing countries, but it had a deleterious impact on the foreign exchange earnings of exporting economies and on their ability to finance imports. After the first quarter of 1999, however, prices for many primary commodities stabilized or started to recover, especially those for petroleum and related energy products. A rebound in prices for some industrial metals and minerals started later in the year. Nevertheless, prices of most non-oil commodities remained below their average for 1998.

Petroleum prices are expected to remain firm in the near term, and any increases in the next two years are likely to be moderate in comparison with those of 1999 and early 2000. However, a continuing recovery in prices of other primary commodities, especially industrial metals, is expected in 2000-2001 as a result of the strengthening world economy. Despite the recovery, the general level of commodity prices is likely to remain low when placed in a longer-term perspective.

Capital flows into emerging economies dropped sharply during the 1997-1998 financial crisis, with net private capital flows contracting in 1998 to one third of their 1996 level. Investor confidence has been gradually restored since the Brazil crisis at the beginning of 1999, but net private capital flows to these countries have remained depressed, with no increase estimated for 1999. However, investor sentiment towards emerging markets has continued to improve into 2000, and a moderate increase in private flows is expected for 2000-2001. As the need for emergency financing abated in 1999, net official lending declined sharply from the surge in 1998, and no substantial increase is foreseen in official flows in 2000. Overall, a restrained external financing environment is expected for most developing countries and economies in transition in 2000 and 2001.

THE REVIVAL IN INTERNATIONAL TRADE

International trade recovered during 1999 from the widespread and abrupt slowdown of 1998 and became one of the more dynamic features of the world economy as it entered 2000. Trade growth early in 1999 remained slow but an accelerating recovery in Asia and continued rapid growth in North America increased trade values and volumes during the second half of the year, and this momentum carried over into and accelerated in early 2000. Although the recent rebound in trade has been spread across many countries and regions, contrasting increases in export supply and import demand at the national level left large and growing trade imbalances in some countries, while reducing or eliminating external deficits and surpluses in other countries. These changes in nominal trade balances were partially induced by significant changes in exchange rates and in relative prices of traded goods.

Preliminary estimates place the total value of world merchandise trade in 1999 at over $5,500 billion when measured in current prices and exchange rates, a 4.6 per cent increase over 1998 (see table II.1). However, because of the sharp fall in the prices of many internationally traded goods in 1998 and 1999, particularly of manufactures and non-oil primary commodities, world trade value in 1999 was only 2¼ per cent higher than the level recorded two years earlier for 1997. Much of this increase may be attributed to soaring prices for petroleum during the year. The current expansion in the total value of world merchandise trade is therefore considerably slower than earlier in the decade when rates of increase on the order of 15 and 20 per cent in a single year were recorded, and, with the exception of trade in petroleum, it is associated with increases in trade quantum rather than trade prices (see table A.13).

The volume of world merchandise trade increased in 1999 considerably faster than in 1998. Export volume rose by 4.8 per cent measured in United States dollar weights as compared with 3.6 per cent in 1998. The pace tended not only to quicken over the course of the year, but also to considerably exceed the rate of increase in gross world product (GWP) by the end of the year. Reflecting the accelerating expansion of world merchandise trade volume, the ratio of world trade growth to world output growth rose.

Table II.1.
TOTAL WORLD TRADE AND AVERAGE WORLD TRADE PRICES, 1997-1999[a]

	1997	1998	1999[a]
Annual percentage change			
Growth of world trade value	3.2	-2.3	4.6
Growth of world trade volume	9.2	3.3	5.6
World trade prices in United States dollars			
All goods	-6.0	-5.6	-1.0
of which:			
Agricultural commodities	1.4	-10.4	-4.9
Raw materials and ores	-7.4	-9.9	-1.9
Mineral fuels	-7.9	-33.4	40.0
Manufactures	-6.1	-2.8	-2.4

Source: United Nations, based on data of United Nations Statistics Division, Economic Commission for Europe (ECE), Economic Commission for Latin America and the Caribbean (ECLAC) and International Monetary Fund (IMF).

[a] Preliminary estimate.

Measured in United States dollars, the world trade price level in 1999 continued its decline both in absolute terms and compared with the level of domestic prices in many countries, although at a slower rate than in recent years. After falling 6 per cent in 1997 and 5½ per cent in 1998, average world trade prices for all goods measured in United States dollars fell another 1 per cent in 1999 as an increase in prices for mineral fuels offset further declines in prices of non-fuel commodities and manufactures. The price declines of non-fuel commodities exported by developing countries in 1999, especially those for agricultural commodities, eroded gains made by many developing countries in terms of the volume of their exports sent to world markets. In contrast, oil prices surged during 1999 and led to large earnings gains by fuel exporters on a reduced volume of exports.

Low domestic rates of inflation in goods-producing industries and decreases in prices of computing and telecommunications equipment led to a decline in the average dollar price of manufactured goods exported by developed countries. In the case of Western Europe, dollar-denominated prices of manufactured and other goods exported by these countries were also affected by a weakening of the euro and some other European currencies vis-à-vis the dollar. In this regard, the continuing decline in the euro, which lost one quarter of its initial value by mid-2000, not only dampened import demand through higher import prices expressed in domestic currencies but also began to exert pressure on inflation in Europe. On the other hand, the falling level of prices on international markets encouraged import demand in those countries with stable or rising exchange rates to the United States dollar.

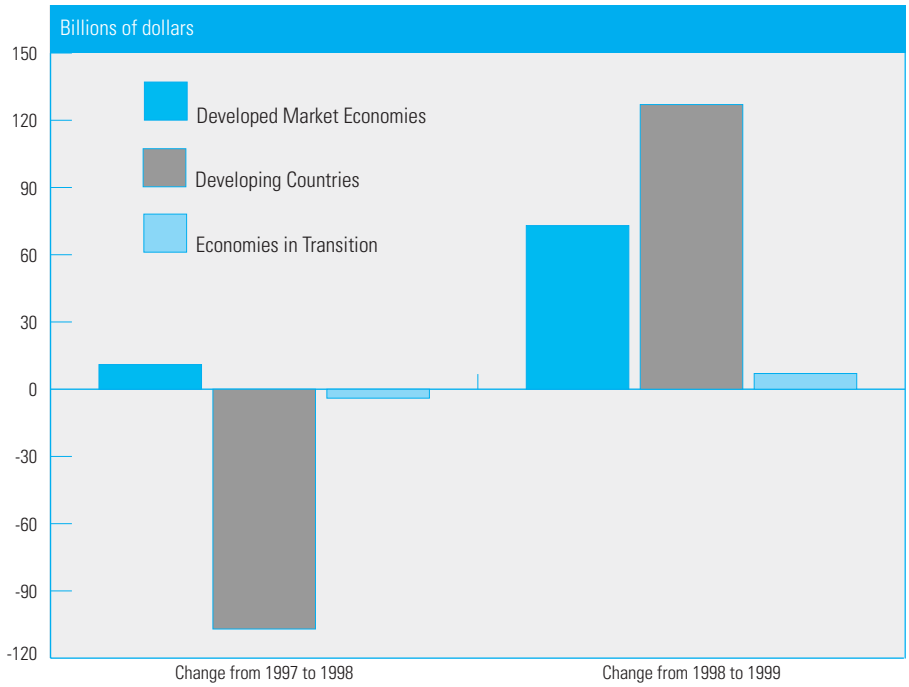
The value of trade in commercial services also regained momentum in 1999 after waning in 1998. On the basis of preliminary data, the value of trade in commercial services increased at a rate of about 1½ per cent in 1999 to exceed $1,300 billion, after having stagnated in 1998. Transport services are estimated to have risen at a rate less than the average for all commercial services while international travel and other services increased about twice as fast as the average rate. The faster pace of increase in commercial services trade was centred in North America and Asia. In contrast, services trade in Western Europe, Latin America and the economies in transition languished or shrank during the year.

A strong rebound in developing-country trade

The value of exports from developing countries rose 8.3 per cent in 1999 from the severely depressed levels of 1998. This strong recovery in exports more than reversed the decline in export value registered in 1998, when developing-country exports fell 6½ per cent, and accounted for over 60 per cent of the increment in the total value of world exports in 1999 (see figure II.1). The economies in transition also recorded an increase in the value of their exports in 1999 that more than offset the decline recorded for 1998, whereas the developed economies increased the value of their trade in both 1998 and 1999, although at a slower rate in 1999 than either the developing countries or the economies in transition.

For all developing countries taken together, over 80 per cent of the increase in export value was accounted for by an increase in export volume rather than export price. However, in a significant exception, the largest relative increase

Figure II.1.
INCREMENT IN VALUE OF WORLD EXPORTS BY MAJOR ECONOMIC REGION, 1997 TO 1998 AND 1998 TO 1999



Source: United Nations, based on data of the United Nations Statistics Division, ECE, ECLAC and IMF.

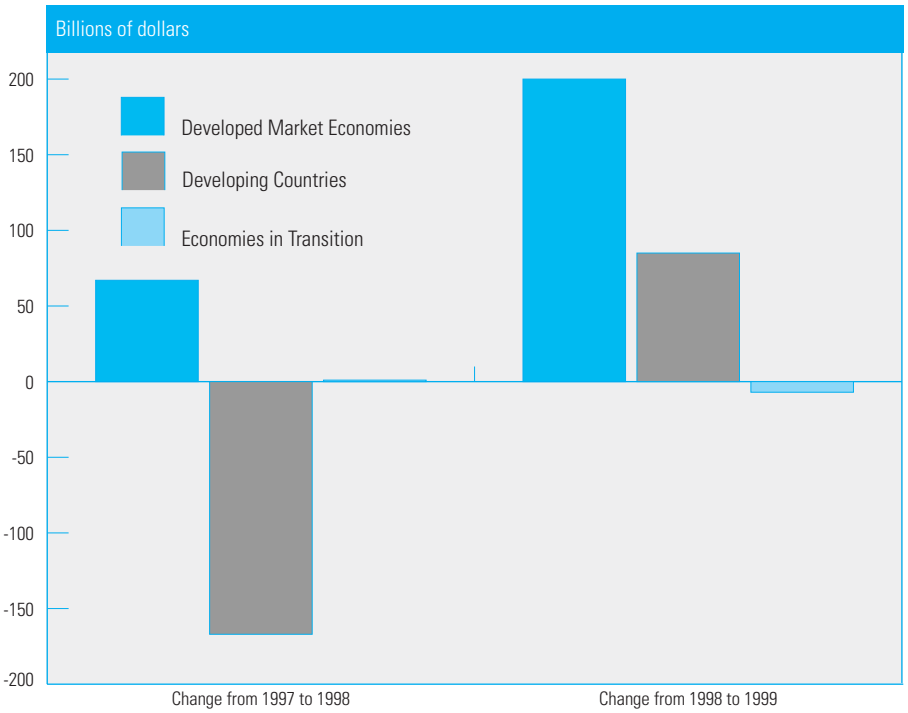
in the value of exports from developing countries in 1999 was recorded by petroleum-exporting countries in Western Asia, where large price increases more than offset a reduction in export quantum to raise the total value of exports by more than one quarter compared with 1998. Similarly, in Africa, the increase in export value significantly outpaced the increase in volume. For other developing countries, the percentage increases in export volume often exceeded percentage increases in export value, reflecting declines in the average prices they received for their exports.

Over 70 per cent of the value of world imports was accounted for by demand originating in the developed market economies (see figure II.2), where imports into North America and Japan grew at a pace of 11.8 per cent and 8.3 per cent, respectively, in 1999.

The United States of America, in particular, continued to provide a major stimulus to the world economy as its foreign demand increased by almost 13 per cent from 1998 to 1999. In contrast, the increase in import value by the slower-growing economies of Western Europe was less than 2½ per cent.

For all developed market economies taken as a group, the average price of imported goods fell 1 per cent in 1999 as the increase in oil prices was offset by further decreases in the average price of non-fuel commodities and manufactured goods. Average export prices of these countries declined even faster, by 2.3 per cent, leading to a terms-of-trade loss. Consequently, given the increase in their volume, the purchasing power of developed market economy

Figure II.2.
INCREMENT IN VALUE OF WORLD IMPORTS BY MAJOR ECONOMIC REGION, 1997 TO 1998 AND 1998 TO 1999



Source: United Nations, based on data of the United Nations Statistics Division, ECE, ECLAC and IMF.

exports on world markets rose only modestly in 1999 and their merchandise trade deficit turned negative as a result of a strong increase in import demand.

The economies in transition recorded a surplus on their merchandise trade account in 1999, with a gain in export value and a lower value of imports. The reduction in import value was centred in the Commonwealth of Independent States (CIS), where both the value and volume of imports declined by more than 20 per cent. Increases in prices of oil and gas exported by these countries led to a sharp rise in the value of their exports, despite a 6 per cent decline in export volume. In the case of Central and Eastern Europe, export value and volumes stagnated in 1999 while imports grew modestly.

The developing countries contributed significantly to the growth of world import demand in 1999. At almost 6 per cent in value terms, imports into developing countries rose faster than the world average and accounted for 30 per cent of the increment in world import demand in 1999. Import demand was especially strong in China and South and East Asia, where the value and volume of both exports and imports increased rapidly during the year. In the case of China, import growth was particularly rapid, reaching almost 19 per cent in value and volume terms. While exports were the driving force in the recovery of many crisis-affected countries in 1999, import demand in those countries did not pick up until later in the year because of a large slack in domestic production capacity, higher relative import costs due to depreciated currencies, and the need to rebuild depleted foreign currency reserves.

Contrasts in trade expansion among and within main world regions

The expansion in exports and imports and adjustments to external balances in 1999 tended to be distributed widely across the world but unevenly in value and volume terms and over individual countries and different kinds of traded goods. Relative price and income effects from the crises and changes in external-financing conditions were mostly unfavourable for import demand in many emerging market economies, but favourable for many developed economies, particularly the United States. The sharp changes in prices of traded goods and contrasts in rates of economic growth gave rise to differences in rates of trade expansion measured in nominal and real terms and trade expansion rates of more rapidly growing countries and other countries.

Export receipts of all developed economies rose in 1999 by 2 per cent on a volume increase of 4.3 per cent. However, export value rose appreciably faster in Canada and supported an improvement in growth performance in 1999. In Australia, Japan, New Zealand, and the United States, export value increased more modestly, whereas the dollar merchandise trade receipts of major European economies declined in response to the euro's depreciating value and sluggish growth.

Export volumes of the developed market economies, on the other hand, increased at a relatively uniform rate among these countries as a falling international price level discouraged increases in exports from developed countries with stable currencies, while the declining euro made European goods cheaper on world markets, promoting demand for their exports. Although modest as an average for the year as a whole, the pickup in export value and volume of these countries as 1999 progressed represented a reversal of a declining trend and strengthened the nascent recovery under way in many of these countries.

Strong import demand by some developed market economies in 1999, notably the United States, turned the net balance of merchandise trade of this group of countries from surplus to deficit. Moreover, reflecting differences in their economic cycles and growth potential, the contrasts in import trends among these countries were even more marked than those of exports as import values and volumes grew at double-digit rates in North America, rose more modestly in Japan and Oceania, and stagnated or rose only slowly in Western Europe.

The United States benefited from large capital inflows that allowed it to finance its growing external deficit. Merchandise imports into Japan rose strongly in volume terms during the second half of 1999, especially considering the slow growth in its economic activity, as its currency strengthened on foreign exchange markets. These increases in external demand helped support recovery in Asia. In the case of Western Europe, a decline in the growth of its trade was recorded for 1999 but a recovery of trade started in the second half of the year and continued into 2000.

Slow growth in Western Europe, the 1998 rouble devaluation, and a recession and abrupt drop in imports into the Russian Federation depressed the value and volume of trade of the economies in transition in 1999. Much of the shrinkage in trade activity was centred in CIS, where imports fell precipitously, owing largely to the contraction in the Russian Federation's imports by one fifth in 1999. For the year as a whole, total imports of CIS countries fell by a third; only Turkmenistan and Uzbekistan escaped the contraction in

imports. Export value remained at the reduced levels of 1998. Some countries heavily dependent on exports to the Russian Federation—Belarus, Kazakhstan, the Republic of Moldova and Ukraine—found the value of their exports reduced by as much as one half or more. Although exports of CIS countries to non-CIS countries increased, low world prices for most non-fuel commodities limited the growth of export revenues in 1999. Notable exceptions were Azerbaijan and Turkmenistan, which nearly doubled the value of their exports of oil and natural gas.

In Central and Eastern Europe, trade was sluggish in value and volume terms in 1999, especially during the first half of the year as external commerce was negatively affected by decreased demand from Western Europe. In addition, trade within the region was adversely affected by changes in exchange rates and by increased protectionism, particularly in the agricultural and food sectors. Nevertheless, trade showed some positive real growth as it gradually recovered by the end of 1999. Despite these factors, there was a rapid expansion of both exports and imports by the Czech Republic and, especially, Hungary, where the volume of exports rose by more than 20 per cent in 1999. However, trade slowed or declined significantly in Poland, Slovakia and Slovenia, particularly because of the high proportion of low value added goods in their exports. Trade routes in South-eastern Europe remained partially blocked in the aftermath of the Kosovo conflict, which affected not only merchandise trade but also the tourism industry.

Import demand was restrained by the weak state of economic activity and aggregate demand in the region as well as external financing constraints, although it did pick up at the end of 1999. The sharp contraction of imports and less significant reduction in exports swung the trade account of these countries strongly towards balance in 1999. Price changes on world markets also moved in favour of these countries, and in consequence their terms of trade improved in 1999 and are likely to improve further in 2000 with a recovery in prices of primary commodities. The revival of trade is expected to continue through 2000, following the upturn in Western Europe, although exports may be dampened by a continuing appreciation of currencies.

In the case of developing countries, the contrasts in trade developments in 1999 were marked in several respects. First, trade values expanded rapidly in 1999 after having plummeted in 1998. Second, there were significant differences in trade trends between the developing countries as a group and the developed market economies as a group. Third, there were notable divergences in trade trends within the group of developing countries owing to divergent price, volume and exchange-rate developments.

Taken together, the aggregate value of exports from all developing countries reached $1,665 billion in 1999, rising at a rate four times faster than that of the developed market economies to account for over 30 per cent of world export value in that year. The export volume of developing countries also increased more rapidly than that of the developed economies, rising at an average rate of 6.8 per cent during the year. Despite the upturn, the pace of export growth in 1999 was slower than earlier in the decade.

The value of imports into all developing countries rose 5.8 per cent in 1999, about the same rate as that for the developed market economies, to exceed $1,550 billion and account for 28 per cent of world import value. This was in

marked contrast to the decline of 10 per cent registered in 1998. In volume terms, imports increased 6.4 per cent, a rate slower than that for the developed economies, but nonetheless a reversal of the 4 per cent decline of the previous year. The more rapid increase in the aggregate for developing-country export value over its corresponding import value led to an increased surplus on its trade account in 1999.

Most of the more than 8 per cent increase in the value of exports by developing countries in 1999 was attributable to the upsurge in prices of fuels entering international trade. Because of the large weight of oil in its exports, the group of net energy exporting countries registered an increase of 14½ per cent in export receipts during the year, despite a much slower increase in export volume. Similarly, exports from Africa increased almost 13 per cent per cent in value in 1999, largely because of a strong rise in exports from the petroleum-exporting economies of the region. Although the average terms of trade of energy-exporting countries improved significantly in 1999, the improvement did not fully make good losses suffered in 1997-1998 when oil prices had declined.

In Latin America, poor trade performance contributed to the worst annual production performance in a decade. For Latin American countries other than Mexico, export values fell and export volumes increased only 2 per cent in 1999, while merchandise imports dropped 14½ per cent in value terms and 12 per cent in volume terms. Trade among the four Southern Cone Common Market (MERCOSUR) members fell by one quarter, and trade within the Andean Community fell even more, contributing to the stagnation and reduced output of the region. In contrast, exports of Mexico and several Central American and Caribbean countries, which consist mainly of manufactured goods directed towards the North American market, increased at double-digit rates in both value and volume. Imports into Mexico, in contrast to other Latin American countries, also increased rapidly.

In terms of volume, the most vigorous export growth among the developing countries was in Asia, where strong import demand from the major developed countries and a resumption in regional trade increased export volumes substantially. Export volumes and values of five emerging-market exporters (Indonesia, the Republic of Korea, Malaysia, the Philippines and Thailand) are estimated to have increased by 11½ per cent and 9½ per cent, respectively, in 1999. The rapid rate of export volume increases in these countries follows even faster expansions in export volumes recorded for 1997 and 1998. Although slower for other countries in Asia, export values and volumes for the region as a whole are estimated to have increased in 1999 by 7 per cent and 10 per cent, respectively. The rise in export value in Asia in 1999 more than offset the decline in export revenue sustained in 1998. Import values and volumes in Asia also rose rapidly in 1999, responding to the recovery in domestic economic activity as well as increased purchasing power on world markets owing to the rapid expansion of export volume and an appreciation in currency values. Current-account surpluses narrowed in some countries but remained sizeable.

China started 1999 with its external sector continuing to be under pressure, as the value of exports declined sharply during the first half of the year. However, since mid-1999, exports have rebounded remarkably, as a result of the recovery in world demand and an increase in the rate of tax rebate on exports. For the year as a whole, the total value of exports increased by over 6

per cent, led by exports of machinery and electric goods, which increased by 15 per cent. Import value rose 18 per cent. Much of the increase recorded in import value was attributable to a successful crackdown on smuggling activities, as reflected in a doubling in tariff revenues. As a result of the rapid increase in imports, China's officially recorded trade surplus declined by more than $10 billion to $29 billion.

Among the group of least developed countries, oil exporters such as Angola and Yemen benefited from sharply higher oil prices whereas non-oil primary commodity exporters, such as Cameroon, Côte d'Ivoire and Togo, experienced little change in or lower values for their exports. Manufactures exporting countries, such as Bangladesh, Haiti and Myanmar, recorded increases in export values and volumes. For all least developed countries, merchandise export receipts are estimated to have risen 10 per cent in 1999 on a volume increase of 8½ percent. Import values and volumes are estimated to have risen about 7½ per cent.

A further acceleration of world trade growth is foreseen

World trade growth is forecast to continue to rise and expand the volume of trade at a rate in excess of 8 per cent in 2000 and 7½ per cent in 2001. The increase in trade of the developed market economies is seen as widespread and substantial, with export and import volumes rising at 8 per cent and 9 per cent in 2000, respectively. In the case of the United States, import demand is expected to remain strong in 2000 but to slacken in 2001, while exports expand vigorously. In Europe, both exports and imports are likely to grow at an appreciably higher rate than in 1999. In this regard, the expected recovery in trade in Western Europe is particularly important since it offsets the still high but eventually slowing trade growth in North America and Japan.

The growth of trade values and volumes of developing countries is also expected to accelerate and rise even faster than for the developed countries in 2000. A sharp turnaround in imports into Latin America is expected, from a decline in 1999 to double-digit growth in 2000, as these economies recover from the region's recent stagnation. A marked pickup in trade of African economies is also expected. In this regard, legislation approved by the United States Congress in May 2000, which was designed to improve trade and investment opportunities between the United States and African and Caribbean countries, should provide some boost to beneficiaries, especially in the production and export of manufactured goods for the United States market. Similarly, the post-Lomé Convention Partnership Agreement between the European Union (EU) and the African, Caribbean and Pacific Group of States (ACP Group) should improve the trade prospects of over 71 developing countries in those regions (see box II.1). In Western Asia, the recent drop in export volumes is forecast to be reversed in 2001 as import growth elsewhere continues. Finally, trade in Asia, which had started to recover in 1999 and is now expanding rapidly, is forecast to continue to accelerate, with exports and imports of many Asian economies expected to rise at double-digit rates in both 2000 and 2001.

In the case of the economies in transition, faster economic growth in Western Europe, improved competitiveness due to the rouble devaluation and strengthening commodity prices should allow the purchasing power of their exports to rise faster than their volume, and the volume of imports to increase

Box II.1.

THE POST-LOME CONVENTION PARTNERSHIP AGREEMENT BETWEEN THE AFRICAN, CARIBBEAN AND PACIFIC STATES AND THE EUROPEAN COMMUNITY AND ITS MEMBER STATES

After 18 months of difficult negotiations, the European Union (EU) and the African, Caribbean and Pacific States Group (ACP Group) of countries reached agreement in February 2000 on a successor arrangement to the Lomé Convention[a]. The agreement sets out a framework for a new 20-year partnership between EU and the ACP Group. The framework covers an overall development strategy for ACP Group countries in partnership with EU, economic and trade agreements, and a political dimension that incorporates agreed principles on governance, respect for human rights and the rule of law, as well as a wide range of other social, political, administrative and operational issues of concern to both parties[b].

The new agreement preserves many benefits of previous Lomé Conventions but introduces key elements in an EU development assistance strategy that reflect, inter alia, the changing composition of EU, changes in broad objectives of EU programmes of development assistance as set out in the Maastricht Treaty on European Union, changes in global political alliances since the end of the cold war, and changes brought about by increased globalization and trading arrangements under World Trade Organization (WTO) rules.

The Lomé IV Convention[c] which expired on 29 February 2000 covered 71 ACP Group countries that had benefited from official development assistance from EU and preferential trading arrangements with EU markets. The first agreement (Lomé I), initiated in 1975 with 46 former colonies of European countries, incorporated preferential trading arrangements that had existed at the time under previous conventions. The trade preferences included free access to EU markets for exports of industrial goods and preferential access for agricultural exports, which were governed by provisions of the EU Common Agricultural Policy. Separate protocols for various commodities granted duty-free access to the EU market under quota limitations. In 1994, the trade regime under the Lomé Convention obtained a General Agreement on Tariffs and Trade (GATT) waiver that provided exemptions from the general principle of most favoured nation (MFN) treatment among World Trade Organization partners.

These trade preferences, however, have eroded over the years as a result of several factors: global trade liberalization under the Uruguay Round of multilateral trade negotiations, EU enlargement (with new members competing for some of the same markets as ACP Group suppliers), an increasing number of free trade area agreements between EU and non-ACP Group developing countries, and other preferential arrangements granted to non-ACP Group suppliers of commodities such as bananas and sugar. Moreover, during the 25 years of the Lomé Convention, ACP Group countries steadily lost market share in EU countries to rapidly growing developing countries in Asia and Latin America. In 1976, ACP Group countries accounted for 6.7 per cent of EU imports but that share fell to 3 per cent in 1998. The poor performance of ACP Group exports has been attributed mainly to lack of diversification towards high-value manufactured goods (10 commodities constitute the bulk of ACP Group exports to EU) and provisions of the EU's Common Agricultural Policy that limit exports of agricultural commodities with respect to which ACP Group countries are thought to have a comparative advantage.

The Lomé Conventions also provided programmes of financial assistance through the European Development Fund (EDF), which is financed by voluntary contributions from EU member States. A new EDF is negotiated at five-year intervals to determine

[a] Document A/AC.176/7.

[b] The text of the Partnership Agreement can be found at the European Commission's development web site (http://www.europa.eu.int/comm/development/cotonou/agreement_en.htm), July 2000.

[c] Complete text contained in *The Courier,* No. 120 (March-April 1990).

Box II.1 (continued)

the amount of funds to be committed and the various instruments and protocols through which the funds are disbursed. Contributions to EDF have declined in the past decade in part because of the preference of some donor countries for bilateral development assistance programmes. Financial assistance was also provided through the STABEX (a system for stabilizing export earnings from agricultural commodities) and SYSMIN (a special financing facility for mining products) schemes that make available short-term financial assistance to ACP Group countries as compensation for losses in export earnings as a result of volatile swings in commodity prices.

The broad outlines of the new Partnership Agreement were first proposed by EU in a document published and circulated for comment in 1996[d]. The main proposals sought to achieve a significant restructuring of Lomé Convention arrangements. Poverty alleviation would become the main objective of EU development cooperation and least developed countries would be the principal beneficiaries of EU development assistance. More aid would be targeted to transition economies in Eastern and Central Europe, Asian least developed countries and poor developing countries in other regions, regardless of past colonial ties to EU member States. Recipient countries would be differentiated according to their level of development so that, for example, specific instruments of EU assistance would be structured to match the absorptive capacity of the country. In addition, some countries would be "graduated" from financial assistance and trade preferences according to their degree of social and economic development.

EU development assistance would also increasingly be linked to economic performance criteria and the recipient country's progress in meeting political and social development objectives—as indicated by progress towards the establishment of democratic institutions, improvements in human rights, good governance, and other social and political reforms. Trade preference agreements under previous Lomé Conventions would be restructured to conform to multilateral trade liberalization provisions of the Uruguay Round of multilateral trade negotiations and World Trade Organization rules. Bilateral trade preferences between the EU and ACP Group countries would be phased out, except for special arrangements that would be made for the benefit of least developed countries. EU trade preferences would be granted through regional trade and development groups, through which current ACP Group members would derive trade and market access privileges similar to the Lomé Conventions arrangements.

ACP Group countries accepted most EU proposals for reform, even though there were significant differences on a number of issues. The ACP Group fought vigorously to preserve the special character of the group in legally binding arrangements with EU. It supported the inclusion of other countries as long as the financial assistance package was increased to maintain established funding levels. The ACP Group also argued for preservation of the trade and market access privileges of the Lomé Convention as well as the broadening and deepening of the financial assistance package to provide more funds for private sector investment. The ACP Group also expressed support for principles of good governance and respect for human rights and the rule of law, but petitioned for a more efficient administration of the disbursal of EDF funds and other financial assistance. In particular, it argued for less conditionality—especially those characterized as political conditionalities—in the granting of development assistance

[d] European Commission, *Green Paper on Relations Between the European Union and the ACP Countries on the Eve of the 21st Century: Challenges and Options for a New Partnership* (Brussels, 20 November 1996).

Box II.1 (continued)

and for more active participation by recipient countries in the design and implementation of development projects funded under provisions of the Lomé Convention.

The new ACP-EU Partnership Agreement has maintained the overall structure and objectives of the previous Lomé Conventions with several innovations. The 20-year agreement provides for an overall review and new financial protocol at 5-year intervals. Financial resources committed to the arrangement amount to just under euro 25 billion for the period 2000-2007, comprising euro 13.5 billion of new allocations in the ninth EDF through 2005, euro 9.5 billion of funds left over from previous Lomé Conventions, which will be managed by the ninth EDF, and euro 1.7 billion allocated to the European Investment Bank for loans to ACP Group countries. Three main components of the agreement—a political dimension, a comprehensive development strategy, and economic and trade agreements—contain most of the innovations and changes from previous Conventions.

The political dimension aims at establishing basic principles of respect for human rights, democratic principles and the rule of law and good governance in the relationships between EU and ACP Group States, as negotiated and agreed by both parties.

The development strategy centres on poverty reduction as the main objective of EU development assistance to ACP Group States. Development assistance, furthermore, will be more closely aligned with international commitments of donor countries, with greater coherence in the bilateral assistance programmes of EU member States and more active participation of local policy makers in the design and implementation of reform programmes. A new feature in the agreement provides for more active and inclusive participation of civil society and non-State actors in all aspects of development cooperation between EU and ACP States. This is expected to strengthen cooperation in areas such as human rights, governance, labour and environmental issues, peace-building and conflict resolution according to specific circumstances in each country.

Economic and trade agreements preserve trade preferences and commodity protocols for an eight-year period ending on 1 January 2008, after which non-least developed countries in the ACP Group are expected to enter into new trading arrangements with EU. Most of these countries are expected to enter into World Trade Organization-compatible free trade area agreements with EU, within geographically based regional economic groupings, during a 12-year transitional period. A separate trade protocol will grant duty-free access to EU markets for essentially all imports from all 48 least developed countries by 2005. The STABEX and SYSMIN compensatory financing schemes are abandoned in the new agreement.

The new partnership agreement falls short of sweeping proposals for a comprehensive restructuring of the Lomé Convention but nevertheless reflects the objective of modernizing, streamlining and updating EU's development assistance activities along the lines first proposed in 1996. The ACP Group was generally satisfied with the agreement, particularly in the preservation of the ACP Group as a recognized legal entity, in the allocation for financial assistance (and promised new arrangements to ensure more rapid disbursement of allocated funds) and in the provision for transitional arrangements that would give countries more time to adapt to globalization and the requirements of the international trading system.

at rates approaching 10 per cent a year. In support of this trend, by early 2000, CIS exports, especially those to the Russian Federation, were on the way to recovery and imports are expected to pick up gradually over the year. The general upturn in trade, particularly in export value, should also help eliminate the aggregate trade deficit of this group of countries with the rest of the world.

Fundamental conditions suggest that income, price and exchange-rate effects currently at work will be sufficient to reduce and eventually eliminate the large imbalances that now characterize the external accounts of many countries. However, contractionary policies, in the form of either an overly aggressive monetary tightening or new restrictions on trade, could markedly change the environment for growth. For this reason, it is important that, along with efforts to sustain the global recovery, trade liberalization should continue. However, the sustained impasse encountered at the Third Ministerial Conference of the World Trade Organization held in Seattle in November-December 1999 with respect to convening a new round of multilateral trade negotiations points to the depth and breadth of the disagreements among nations and various interest groups on how to liberalize further broad areas of economic activity, particularly service sectors. Nonetheless, an open world economy is an essential component of the recovery process, without which neither economic stability nor economic advance can be ensured.

RISING PRICES IN INTERNATIONAL COMMODITY MARKETS

Although commodity prices continued to be negatively affected in 1999 by the downturn in demand in the wake of the Asian financial crisis, conditions in many markets stabilized during the year and the broad decline in prices that had characterized many world commodity markets since 1997 began to slow. In the case of petroleum, it was strikingly reversed during the year. On average, real prices in non-oil commodity markets dropped another 12 per cent in 1999 on top of the 11 per cent decline registered in 1998 (see table A.17). The fall-off in average prices for 1999 as a whole was widespread over all non-oil commodity groups, encompassing steep declines in prices for many agricultural products and fertilizers, but less extensive reductions in the case of metals and minerals; in a few exceptional cases, prices for some individual commodities, such as timber, rose steadily during 1999. Even though the unit value of manufactures exported by developed economies declined, the fall in nominal commodity prices was such that the reduction in the real price of non-fuel primary commodities on world markets in 1999, measured in terms of the quantity of manufactures that one dollar of primary commodities can purchase, was the largest observed in many years.

In many commodity markets, the rate of price decline slowed during the year as the upturn in world economic activity gave renewed strength to demand at a time of cutbacks in production by major commodity producers, particularly those in the metals and minerals sectors. In this regard, the higher rate of industrial activity in manufacturing-oriented economies in Asia, with a consequent increase in their raw materials intake, helped lift demand in 1999. By year-end, price indices for a broad array of commodities were higher than they had been earlier in the year, although still below average levels of 1998.

In the case of the petroleum market, the recovery in prices during 1999 was the strongest in many years. Growing world demand, combined with production cutbacks by major producers, led to significant imbalances between supply and demand, lower stocks and a tripling in price between February 1999 and March 2000. Industry stocks worldwide were lower at the end of 1999 than at any time in the past decade, and this contributed to increased volatility in petroleum prices and exacerbated the market's susceptibility to supply disruptions and demand spikes.

In the early months of 2000, few commodity markets were stable in dollar terms: prices for petroleum continued to rise and those for minerals and metals rose and fell, while tropical beverage and some food prices declined, sometimes by significant percentages. Higher world economic growth and reduced surpluses in some markets are expected to support a broad-based recovery in non-fuel commodity prices through 2000 and into 2001. Similarly, the prospect of a sustained increase in crude oil demand in a strengthening world economy points to firm prices in oil markets for 2000 with perhaps some easing later in the year.

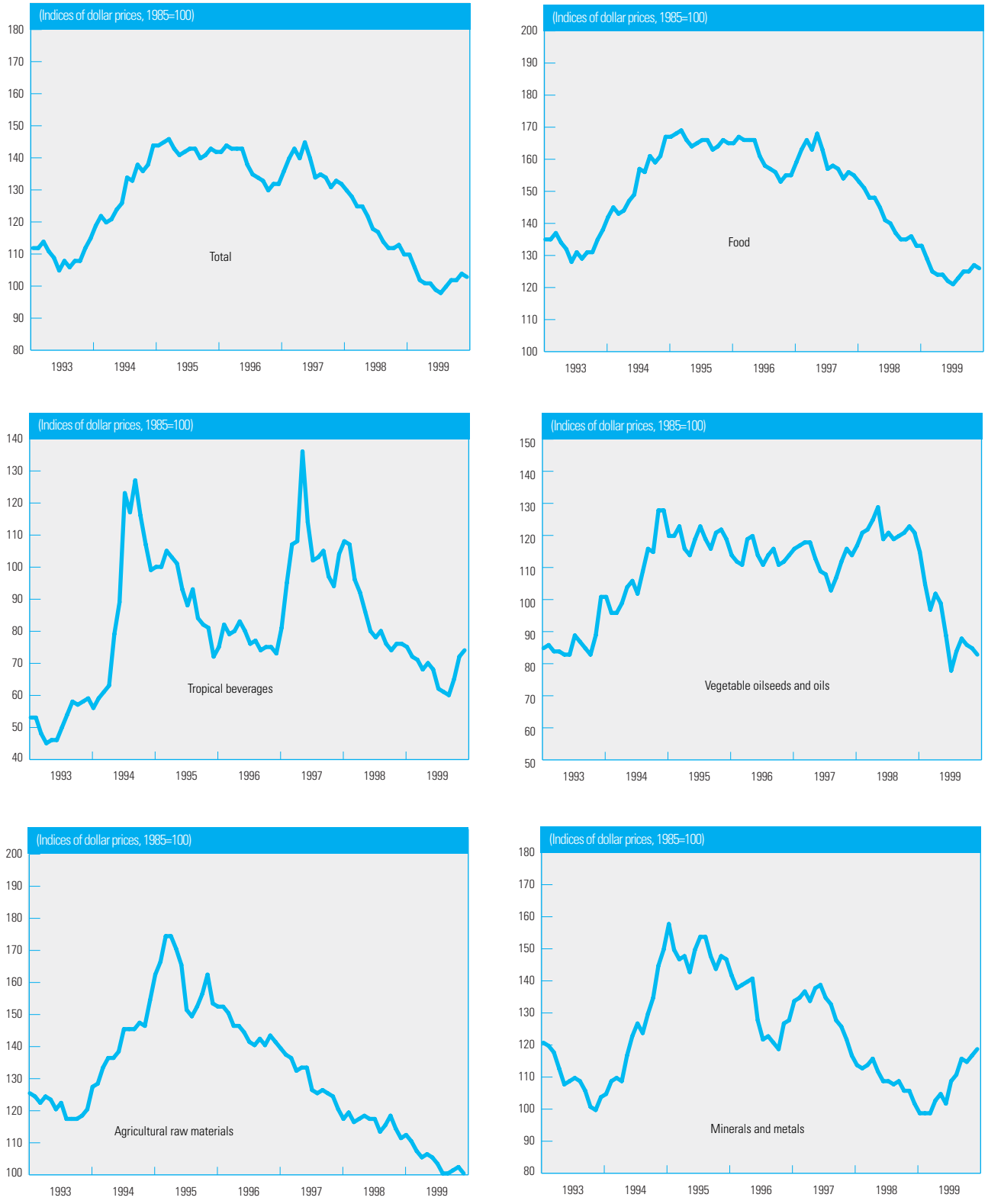
A strengthening of non-fuel commodity markets

Among the major categories of non-fuel primary commodities, agricultural prices experienced the sharpest drop in 1999. In the case of **food and tropical beverages**, prices of most food products dropped considerably faster in 1999 than they had in 1998 owing to supply gluts, large stocks and weak demand, although the pace of the decline tended to slow during the year (see figure II.3). Hardest hit was the price of sugar. The coincidence of global production is reaching record levels, the emergence of Brazil as the dominant low-cost exporter, and a fall in demand from the Russian Federation, the world's largest importer of sugar, and from major Asian importers combined to bring about a 30 per cent drop in prices. Sugar price increases in 2000 are likely to be moderate unless this year's crops are affected by adverse weather conditions.

Similarly, prices for cereals such as maize, wheat and rice declined steadily on international markets over the course of the year but rose somewhat at the beginning of 2000, partly in response to increasing signs of drought in key growing areas. World consumption of cereals is likely to increase only slowly, however. Given sizeable stocks, ample exportable supplies are likely to be available. Average prices for vegetables, fruits, dairy products and sugar also dropped in 1999 and during the early months of 2000. The only main category of food commodities to experience an increase in price was meat, where prices continued to rise through the first quarter of 2000.

In the case of tropical beverages, prices fell by 21 per cent on average in 1999, reflecting an overall depression of prices for cocoa, coffee and tea. Owing to a large surplus supply, cocoa prices declined by a further one third in 1999, reaching a new low in December. Mainly owing to beneficial weather conditions, crops in the major West African producer countries—Cameroon, Côte d'Ivoire, Ghana, and Nigeria—and in Indonesia, the third-largest producer, are expected to increase significantly in the 1999/00 season. Thus, prices are expected to stay low in 2000 despite a modest recovery in demand. The coffee market in 1999 was characterized by oversupply and volatile and falling prices.

Figure II.3.
NON-FUEL COMMODITY PRICES, 1993-1999



Source: UNCTAD, *Monthly Commodity Price Bulletin.*

The drop in prices was temporarily halted by fears of drought in Brazil's coffee region in the last quarter of 1999. However, as weather conditions and production prospects in Asia and Africa improved, prices fell in the first quarter of 2000. Output in the 1999/00 season is expected to increase in most major producer countries, and prices are therefore unlikely to recover in 2000, in spite of a recent agreement among major coffee producers to withhold surpluses from global markets.

Prices for a broad array of vegetable oilseeds and oils commodities, with the exception of soybeans, fell at an accelerating rate in 1999. This more than reversed the gains recorded in 1998, with an average price decline of over 20 per cent for 1999 as a whole. Owing to abundant supplies and increased production, further drops in average prices for copra, groundnut, coconut and palm kernel oil were also recorded in the first quarter of 2000, amid continued month-to-month price volatility.

In the major category of **agricultural raw materials**, comprising such items as crude rubber, cork and wood, pulp and waste paper, textile fibres and other materials, average prices fell by 10 per cent in 1999. Cotton and natural rubber were among the hardest hit. In spite of a decrease in output, cotton prices dropped over 20 per cent in 1999, partly because of a fall in world demand. This decline adversely affected the balance of payments of several major developing-country producers, in particular several West African countries as well as Turkmenistan and Uzbekistan. Reflecting changed conditions in the market, cotton prices rose 15 per cent in the first quarter of 2000 compared with the last quarter of 1999. For the 2000/01 season, with the exception of the United States, all major producers are expected to reduce output, while consumption should increase. As a result, cotton prices should improve in the coming season.

As consumption of natural rubber in Asia accounts for over half of total world demand, the price of rubber saw a sharp decline following the Asian financial crisis. Continued weak demand, record production and high stocks generated a fall in rubber prices of 15 per cent in 1999, sending prices to a 24-year low. In addition, the International Natural Rubber Agreement (INRA), the world's last surviving commodities pact outside the oil industry, was terminated in October 1999. The breakdown of the agreement came as a consequence of decisions first by Malaysia and then by Thailand, which together produce about 45 per cent of the world's natural rubber, to leave the agreement. The demise of the International Natural Rubber Organization (INRO) reflected fundamental differences over the objectives of the agreement, with Malaysia and Thailand arguing that the group should seek to set world rubber prices, rather than aim for stability in the market. Malaysia and Thailand subsequently agreed to coordinate their sales in an effort to influence prices. The INRO stockpile of 140,000 tons of rubber will be liquidated over a period of three years.

Poor weather conditions in South-East Asia in the second half of 1999 and the first quarter of 2000 have contributed to a recent spike in rubber prices. Several factors, including firmer demand from the automobile industry, higher prices for a competing product (petroleum), and a seasonal fall in supplies, have also combined to push up the price of rubber in the early months of 2000. Slower production growth and increased demand in 2000 should sus-

tain the recovery in rubber prices. However, there is uncertainty regarding how the liquidation of INRO's stockpile may affect the market. Some of the stockpile is likely to be kept off the market under the agreement between Malaysia and Thailand.

The main exception to the bleak performance of agricultural raw materials in 1999 was tropical timber. Prices of tropical sawnwood and plywood increased by over 17 per cent in 1999. Improved demand prospects and tight supplies from major producers due to adverse weather conditions and environmental concerns are expected to sustain high prices in 2000.

In the major category of **metals and minerals**, average prices fell 1.8 per cent in 1999. However, this fall masks a strong recovery through the year. After falling since the end of 1997, metals and minerals prices reached a low in March 1999 and then rose 20 per cent during the remainder of the year. Prices for base metals such as aluminium and copper, each of which accounts for about 5 per cent of primary commodity trade, staged a strong advance over the course of 1999 and into the first quarter of 2000. Nickel had the sharpest recovery, with a 60 per cent increase from March 1999 to December 1999 compared with about a 30 per cent rise for prices of aluminium and copper during the same period. Although the rise was smaller in percentage terms, prices for iron ore, tin and zinc also increased between the first quarter of 1999 and the first quarter of 2000.

The recovery in prices of base metal and minerals during the last three quarters of 1999 was sparked by production cuts, the rebound of demand in Asia, and expectations of higher growth in the world economy. However, inventories of a number of metals remain high, thus restraining overall price pressures. Also, in the case of copper, significant new capacity is coming on stream in main producing countries such as Australia, Chile and Indonesia. On the demand side, prices for metals and minerals have been supported by strong growth in manufacturing sectors, particularly the automotive sector, in Asia and the United States, and to some extent in Western Europe.

The recent recovery in non-fuel commodity prices is expected to continue through 2000 into 2001 as more rapid world economic growth and production cutbacks contribute to tighter market conditions. In the early months of 2000, prices of metals and minerals continued to increase on expectations of higher demand from a rising level of world industrial activity. Prices of aluminium, copper and nickel have been rising and those for palladium, platinum and rhodium have soared. For the year as a whole, metal prices are expected to be 5 to 10 per cent higher in 2000 than in 1999.

Sales of gold dampen precious metals markets

Price movements of precious metals were volatile but largely unchanged on average, with gold prices at about the same level in the first quarter of 2000 as they had been a year earlier and silver prices somewhat lower. In the gold market, prices increased following the announcement of an agreement of 15 European central banks in September 1999 to limit gold sales over the next five years, except for already decided sales. The central banks also stated that gold would remain an important element of global monetary reserves.

In the first quarter of 2000, the International Monetary Fund (IMF) completed planned sales of 13 million ounces of gold as part of an agreement to fund IMF's share of the Highly Indebted Poor Countries (HIPC) Initiative. The sales were conducted with Brazil and Mexico through off-market transactions, which allowed IMF to revalue the gold without affecting its market price. Net proceeds from the revaluation were invested to generate income for the HIPC Initiative (see below).

Despite gains in the second half of 1999, gold prices fell back in March 2000 from highs because of weak fundamentals caused by actual and prospective sales from central banks and forward sales by producers. If, as expected, demand picks up in 2000 and the agreement of European central banks to restrict their sales holds, there should be a modest increase in gold prices later this year. However, a reversal of the long-term decline in prices of precious metals seems unlikely.

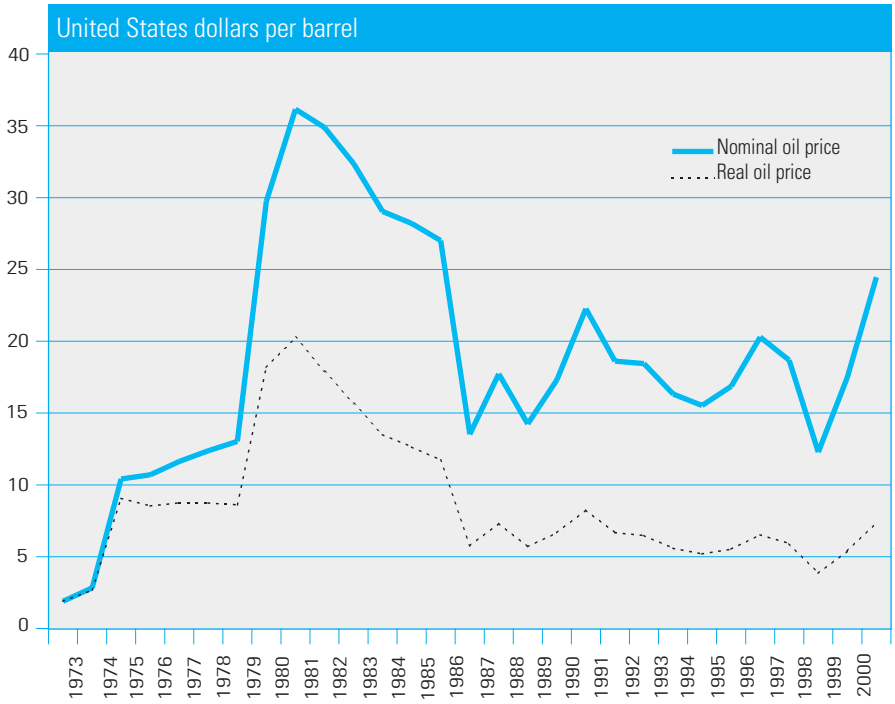
A strong rebound in oil prices

The recovery in primary commodity prices in 1999 was greatest in the case of petroleum. In contrast to the situation in 1997 and 1998, when increased supplies and a sharp downturn in global demand led to an oil price decline, growing world demand in 1999 and producer cutbacks worsened supply/demand imbalances in the market and placed upward pressures on prices. In the changed environment, oil prices staged a remarkable recovery in 1999 that continued into 2000 as the price of a barrel of oil rose from a low of $10.40 in December 1998 to a high of well over $30 a barrel in March 2000, its highest level in nominal terms since the early 1980s. In real terms, oil prices remain lower than in the early 1980s (see figure II.4). The oil price rise of 1999 led to significant changes in the terms of trade and consequent net transfer of resources between oil-producing and-consuming countries (see box II.2).

The strengthening of oil markets began with an agreement in March 1999 among petroleum producers to reduce production which was maintained throughout the year and into 2000. Several other factors also tended to restrict any increase in production. On the supply side, low oil prices in 1997 and 1998 had led to sharp reductions in expenditures on maintenance and development, and many marginal wells were shut down in high-cost production areas. These developments left many oil producers, in particular non- Organization of the Petroleum Exporting Countries (OPEC) producers, with little spare capacity to meet the strong rise in demand in 1999. On the demand side, the effects of the financial crisis were more short-lived than expected. Oil demand in Asia rose by almost 5 per cent in 1999, reflecting the economic recovery taking place in the region. Strong growth in North America also contributed to demand. Because demand outpaced production, in spite of rapid price increases inventories shrank precipitously.

At the start of 2000, petroleum prices remained at about $25-30 per barrel owing to reduced inventories and continued compliance by members of OPEC with their agreement to limit production. At its annual meeting in late March 2000, OPEC, with the exception of the Islamic Republic of Iran, agreed to reverse some of the production cutbacks initiated at its March 1999 meeting. Following this agreement, a number of non-OPEC suppliers also announced

Figure II.4.
REAL AND NOMINAL OIL PRICES, 1973-2000 (OPEC crude oil basket)



Sources: *Middle East Survey;* United States Department of Commerce, Bureau of Economic Analysis and United Nations Secretariat.

additional increases in their production. These increases in supply are expected to help close the gap between supply and demand. Despite the recent changes in quotas, however, prices are likely to remain strong over the next few months, as inventories will need to be replenished and the net gain in output, under the quotas, will not suffice to reduce current prices by a substantial margin.

FINANCIAL FLOWS TO DEVELOPING AND TRANSITION ECONOMIES AND MAIN POLICY DEVELOPMENTS

Net financial inflows to developing and transition economies in 1999 remained well below the levels of the pre-crisis 1990s, owing to subdued private flows and a sharp decline in official financing. By late 1999, however, investor sentiment towards emerging markets improved significantly, based on substantially stronger economic performance and improved external balances of a growing number of countries. As a result, the cost of external credit fell substantially and the flow of credit to emerging market economies began to rebound. Equity investment flows recovered strongly during the year and into early 2000. Aggregate private financial flows to these countries can be expected to increase further in 2000, owing to increased international lending and purchases of equity shares in developing-country firms. Nevertheless, private financial flows will remain substantially below those prior to the Asian financial crisis. They will be vulnerable if global interest rates rise more than expected in the baseline forecast or if there are large and sustained price reduc-

Box II.2.

OIL PRICES AND THE TRANSFER OF RESOURCES BETWEEN COUNTRIES

Large changes in oil prices imply a substantial transfer of resources between oil-importing countries and oil-exporting countries. For the majority of the larger oil-exporting developing countries, revenues from the petroleum sector constitute their dominant source of both export and budget revenues. As a result of the slump in oil markets in 1997 and 1998, most oil-exporting developing countries incurred fiscal and current-account imbalances, and were compelled to reduce government expenditures and undertake other fiscal adjustments to reduce already high budget deficits. Although the hike in oil prices relieves some of the pressure that these countries face in terms of internal demands on their budgets and external pressures on their balance of payments, the increase in revenues is not likely to allow a large accumulation of financial reserves as it did in the 1970s and 1980s. Therefore these countries need to pursue continued structural reforms to diversify their domestic economies (see chap. III).

For the oil-importing countries, the increase in oil prices represents a negative shift in their terms of trade with adverse effects on inflation, the trade balance and real output. However, the magnitude of the effects is quite different for developing as compared with developed oil-importing economies.

In the case of Organisation for Economic Cooperation and Development (OECD) economies, it is estimated that a $10 increase in oil prices in 2000 would lead to a drop in output of 0.2-0.5 per cent of the gross domestic product (GDP) of oil-importing member countries[a] . Although significant, the impact is several times lower than that following the oil price shocks of the 1970s because of the reduced effect of an increase in oil prices on the domestic price level. The extent to which oil price rises feed into inflation and interest rates in the developed economies depends on how oil price increases pass through the cost structure of the economy. A sustained rise in oil prices that feeds through into consumer prices and wages is likely to trigger a tightening of monetary policy in order to restore price stability (see chap.I). In the United States, for example, higher oil prices in 1999 caused "headline" inflation (consumer price index (CPI)) to rise from a rate of 1.6 per cent in 1998 to 2.2 per cent in 1999. However, developments in the core CPI, which excludes food and energy prices, indicate that there has not thus far been a significant pass-through of rising energy prices to the rest of the United States economy. In EU, even though most economies are operating below capacity, real wages tend to be less flexible, and high oil prices could have a more significant impact on consumer prices and possibly result in an increase in interest rates.

However, oil dependence has fallen in developed economies since the 1970s (see figure), and the adverse effects of an oil price hike on output and inflation have consequently decreased in relative terms. The fall in oil consumption per unit of output is due to extensive substitution of oil by other energy sources, increased energy efficiency in production, in particular in the manufacturing sector, and lower energy intensity because growth has shifted towards the service sector.

For a number of reasons, the adverse effects of oil price increases are likely to be more severe in oil-importing developing countries. First, in most developing countries, oil consumption per unit of output has increased more than for developed economies, and the relative effect on developing countries' import bills of an oil price hike is therefore larger than for developed economies. On average, oil-importing developing countries use more than twice as much oil to produce one unit of output as do more economically advanced countries. Robust GDP growth, reliance on expansion of energy-intensive manufacturing to spur growth, urbanization, the replacement of non-commercial energy sources by modern fuels, and a substantial increase in motor vehicle ownership have contributed to the rapid rise in oil demand in the developing world. Moreover, the same factors may imply that the scope

[a] OECD, *Economic Outlook* (December 1999).

Box II.2 (continued)

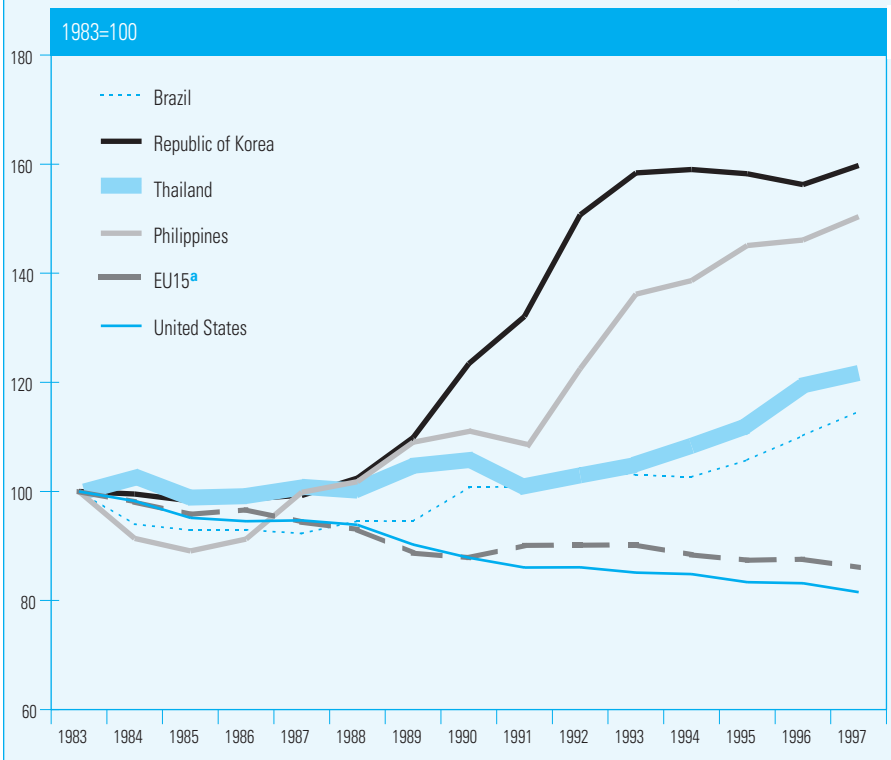
for substituting oil for other energy sources, in both the short term and the long term, is smaller in developing countries than in developed economies. In addition, developing countries have relatively fewer financial and technological capabilities to develop and invest in alternative energy sources and energy-efficient production processes.

To the extent that oil demand is more insensitive to price increases than other kinds of imported goods and that additional external finance for more expensive oil imports is not available, a sharp increase in oil prices reduces non-oil imports. Oil-importing developing countries are therefore likely to experience balance-of-payments problems and can be required to cut spending and reduce imports. Moreover, if higher oil prices are followed by rising international interest rates, debt-servicing costs could increase significantly in countries with a large stock of floating-rate external debt. Limited foreign exchange reserves and access to external short-term finance mean that even temporary oil price hikes can have significant negative effects in these countries.

Increases in oil prices are likely to hit poorer segments of the developing countries in particular, as increases in energy costs tend to raise the price of other essential goods, such as food, transport and fuel. This would also be the case in oil-exporting developing countries to the extent that incomes are unequal and petroleum products are not subsidized.

The vulnerability of individual countries depends on how dominant oil is as an energy source and the extent to which other energy sources can be substituted for oil in the short-to-medium term. In East Asia, the Republic of Korea, the Philippines and Thailand are heavily dependent upon oil imports, and would be particularly hard hit by oil price increases. A sustained hike in oil prices could delay economic recovery and create inflationary pressures in these countries.

SELECTED COUNTRIES: OIL CONSUMPTION PER UNIT OF OUTPUT, 1983-1997



Source: *Energy Balances of OECD and non-OECD Countries*, OECD 1999 edition.

[a] The fifteen member countries of the European Union (EU).

tions in stock markets in developed countries. In addition, no substantial rebound is foreseen in official flows; notably, official development assistance (ODA) is expected to remain at depressed levels overall. Moreover, countries that were on the sidelines as regards financial flows before the crisis largely remained so in 1999 and no significant change is foreseen in 2000.

Private financial flows

International investor sentiment began in 1999 at a nadir, as Brazil could no longer prevent the real's devaluation. After that, sentiment began to improve, although a high credit risk continued to be assigned to emerging market countries for most of the year, albeit with the exception of a number of East and South-East Asian countries, where recovery from financial crisis began to take hold. In Latin America, the political uncertainties associated with elections in a number of countries and the still nascent improvement in performance in a number of economies in the region contributed to the perception of relatively high risk. The lingering effects of the Russian debt crisis also deterred financial flows to some of the transition economies and some of them lost access to international capital markets.

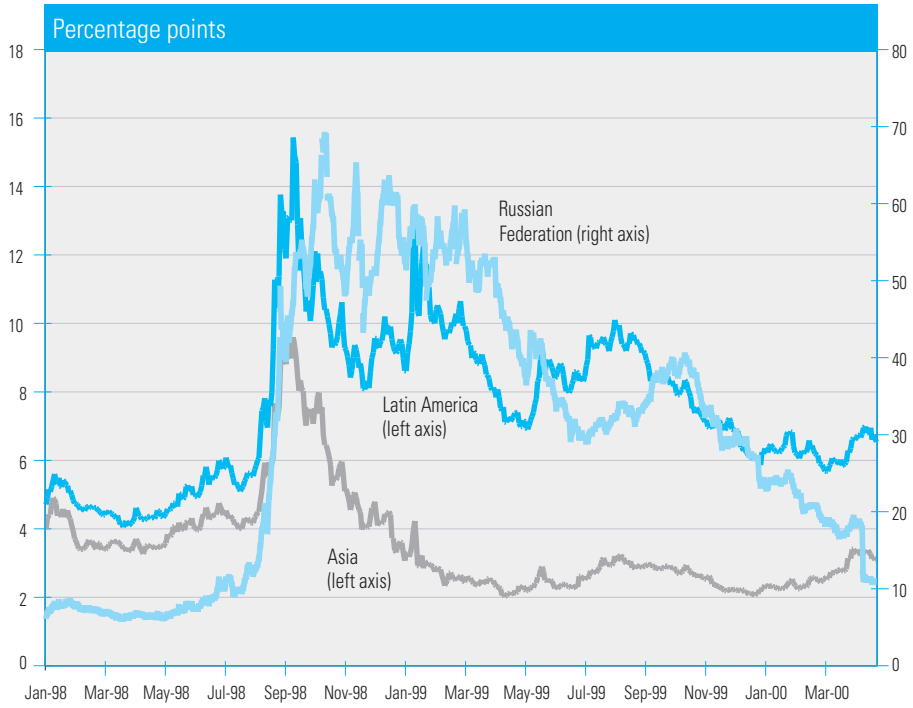
Default or concerted restructuring of international bond payments in 1999 by Ecuador, Pakistan, Romania and Ukraine heightened bond holders' concern about the risk of holding sovereign bonds of emerging economies in general. In the minds of investors, these developments were coupled with ongoing international discussions that had raised the expectation that private creditors would be expected to contribute more heavily to the resolution of international financial crises. One dimension of this is the continued movement to include clauses in sovereign bond contracts that would make it easier to restructure the interest and principal payments in crisis situations. These measures have met with widespread opposition from private creditors.

By the end of the year, it became evident that the individual cases of rescheduling of sovereign bonds would be resolved. In addition, the April 2000 meeting of the International Monetary and Financial Committee (IMF) agreed that participation of private creditors in debt crisis resolution where IMF assistance was involved would be decided on a "case-by-case" basis rather than by any new rule-based procedures.[1] The successful restructuring in February of the commercial bank debt that the Russian Federation had inherited from the former Union of Soviet Socialist Republics also contributed to the reduced perception of riskiness of emerging market debt.

This change in market sentiment was reflected in a sharp decline between the second half of 1999 and early 2000 in the spread or difference between the yield on bonds of developing and transition economies and that of the standard risk-free benchmark, United States Treasury bonds (see figure II.5). This was mirrored in the successive improvements in risk ratings on sovereign debt of a number of emerging economies in different regions. By early 2000, sovereign debts of a number of these countries had regained "investment grade" ratings, giving their Governments access to the group of institutional investors that are restricted to placing funds in bonds having such ratings.

[1] See "Communiqué of the International Monetary and Financial Committee of the Board of Governors of the International Monetary Fund", Washington, D.C., 16 April 2000 (*IMF Survey,* vol. 29, No. 8, 24 April 2000, pp. 119-123.)

Figure II.5.
YIELD SPREADS ON EMERGING MARKET BONDS, JANUARY 1998 TO MARCH 2000



Source: Data of J.P. Morgan Co., New York.

Private credit

Private credit flows to emerging economies peaked prior to the onset of the Asian crisis. Funds began to be withdrawn and new credits largely dried up for crisis countries, except as part of concerted debt restructuring exercises. By 1999, there were large net payments to foreign banks owing to the continued withdrawal of short-term credit, few new medium- and long-term loan commitments and substantial loan repayments (see table II.2). The low level of new bank lending was due, on the one hand, to weak demand for loans, particularly by Asian countries, and on the other hand, to lower willingness of banks to lend. In the light of crisis experiences, international banks reduced their exposure to emerging markets as a group. Lending is expected to pick up in 2000, albeit slowly, as economic and financial conditions improve.

Bond issuance by emerging markets in 1999 remained largely at the low level of 1998. It was depressed by high spreads demanded by the market for most countries and outright unwillingness to take up prospective new bond issues of a number of countries. However, the significant improvement in credit ratings after the last quarter of 1999 buoyed bond issuance. The increase was concentrated in Latin America, where a number of countries with large external deficits shifted to bond financing as an alternative to increasingly scarce bank credit. On the other hand, large external account surpluses in a number of Asian countries limited the demand for foreign funds, while facilitating repayments by countries such as the Republic of Korea and Thailand. If strengthening economic recovery and favourable credit conditions are sustained, further

Table II.2.
NET FINANCIAL FLOWS TO DEVELOPING AND TRANSITION ECONOMIES, 1990-1999

Billions of dollars

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Developing and transition economies										
Total net flows	66.9	144.9	133.8	189.3	139.7	238.6	216.3	171.1	119.8	83.5
Net private capital flows	43.8	110.4	112.6	172.1	136.3	226.9	215.9	147.6	75.1	80.5
Net direct investment	18.5	31.6	35.4	59.5	84.0	92.6	113.2	138.6	143.3	149.8
Net portfolio investment[a]	15.7	27.1	56.1	84.4	109.6	36.9	77.8	52.9	8.5	23.3
Other private flows[b]	9.5	51.7	21.1	28.3	-57.3	97.4	24.9	-43.9	-76.7	-92.5
Net official flows	23.1	34.5	21.2	17.2	3.4	11.8	0.4	23.5	44.7	3.0
Eastern and Southern Asia										
Total net flows	25.5	45.8	31.1	65.9	74.3	111.5	107.8	20.2	-14.9	-28.0
Net private capital flows	19.8	34.9	20.8	57.4	63.6	104.9	104.1	-1.4	-42.6	-27.1
Net direct investment	9.2	14.5	15.7	33.9	47.1	46.6	53.1	55.5	58.3	49.9
Net portfolio investment[a]	-2.4	1.2	9.0	21.8	11.8	14.2	12.9	3.5	-17.9	-5.6
Other private flows[b]	13.1	19.2	-3.9	1.7	4.7	44.1	38.1	-60.3	-82.9	-71.3
Net official flows	5.6	10.9	10.3	8.5	10.7	6.5	3.7	21.6	27.7	-0.9
Latin America and the Caribbean										
Total net flows	17.3	26.8	53.8	67.3	45.8	61.3	67.5	81.9	76.1	57.7
Net private capital flows	13.7	24.1	55.6	66.8	49.4	53.2	72.2	85.5	70.0	54.1
Net direct investment	6.7	11.3	13.9	13.4	23.1	24.7	39.5	53.1	56.1	63.6
Net portfolio investment[a]	17.5	14.7	30.4	44.0	66.7	3.0	41.0	19.2	14.7	10.6
Other private flows[b]	-10.5	-2.0	11.4	9.4	-40.4	25.5	-8.4	13.2	-0.8	-20.1
Net official flows	3.6	2.7	-1.8	0.5	-3.6	8.1	-4.7	-3.6	6.1	3.6
Africa[c]										
Total net flows	6.7	9.7	6.4	4.5	10.6	18.2	12.0	15.4	14.1	16.4
Net private capital flows	-4.6	2.0	-4.0	-1.8	2.9	10.9	7.5	16.7	11.5	14.8
Net direct investment	1.2	2.1	0.6	1.9	2.3	2.2	4.8	7.4	5.2	9.6
Net portfolio investment[a]	-1.2	0.4	1.9	1.0	2.0	1.4	1.3	3.7	4.3	4.4
Other private flows[b]	-4.6	-0.5	-6.4	-4.7	-1.4	7.3	1.4	5.6	2.0	0.9
Net official flows	11.3	7.7	10.4	6.3	7.7	7.3	4.6	-1.4	2.5	1.6
Middle East and Europe[c]										
Total net flows	6.6	68.7	36.7	31.0	14.9	12.8	14.1	23.2	21.4	25.3
Net private capital flows	12.6	64.9	38.0	28.7	16.0	13.9	15.2	24.0	22.0	27.1
Net direct investment	1.7	1.3	1.1	4.3	6.1	5.5	2.1	2.9	2.7	3.3
Net portfolio investment[a]	1.8	10.8	14.9	8.8	9.0	5.0	3.5	5.0	0.2	10.2
Other private flows[b]	9.1	52.8	22.0	15.7	0.8	3.3	9.6	16.0	19.1	13.5
Net official flows	-6.0	3.8	-1.3	2.3	-1.1	-1.2	-1.1	-0.7	-0.5	-1.8
Economies in transition										
Total net flows	10.8	-6.1	5.9	20.6	-5.8	35.0	14.9	30.4	23.2	12.1
Net private capital flows	2.2	-15.4	2.3	21.0	4.5	44.0	17.0	22.8	14.2	11.6
Net direct investment	-0.3	2.4	4.2	6.0	5.4	13.7	13.7	19.7	21.0	23.5
Net portfolio investment[a]	0.0	0.0	0.1	8.7	20.0	13.3	19.2	21.5	7.2	3.7
Other private flows[b]	2.5	-17.7	-2.0	6.3	-21.0	17.1	-15.8	-18.5	-14.0	-15.6
Net official flows	8.6	9.3	3.6	-0.4	-10.3	-9.0	-2.1	7.6	9.0	0.6

Source: International Monetary Fund, World Economic Outlook Database, 2000.

[a] Including portfolio debt and equity flows.
[b] Including primary short- and long-term bank lending. It may include some official flows owing to data limitations.
[c] International Monetary Fund country groupings differ from those of the *World Economic and Social Survey*.

improvement in access to bond markets by emerging markets in 2000 can be expected.

Portfolio equity investment

Portfolio equity investment rebounded in 1999, after the plunge in 1997 and 1998, but flows remained much below the peak preceding the Asian financial crisis. Portfolio investment was driven by the improvement in economic performance and rising stock prices in emerging markets, including those affected by financial crisis. Stock prices in emerging markets rose by an average of over 60 per cent in 1999 in United States dollar terms[2], with large increases late in the year and into 2000. Asian countries received the largest increase in net portfolio equity flows in 1999, while there was also a rebound in flows to Latin American countries as well as to South Africa. However, large price corrections at the beginning of the second quarter of 2000 in the stock markets of developed countries spread to stock markets of developing and transition economies.

Direct investment

Direct investment continues to be the largest net source of external private capital for developing and transition economies. In 1999, net flows of direct investment to developing and transition economies continued to increase, although at a much slower pace of growth than in the early 1990s (see table II.2). Direct investment's resilience in the face of sharp contractions of other private sources has been a stabilizing factor in financial flows to these economies since the onset of the financial crisis in 1997.

Investment by companies of developed countries has been abetted by sharp appreciation of stock prices in developed countries in the last two years, which facilitated their own fund-raising. At the same time, financial and corporate restructuring and privatization in developing and transition economies generated new opportunities for investment, many of which took the form of cross-border mergers and acquisitions. In contrast to the early 1990s, there was little investment in "greenfield" projects, owing to excess capacity in many industries.

The inflow of direct investment to developing economies in 1999 increased by 15 per cent (see table II.3)[3]. Investment inflows to Latin America increased by over 30 per cent in 1999, signifying the strongest growth among all developing regions. In spite of currency devaluation and overall uncertainty, direct investment inflows to Brazil increased substantially on the strength of privatization receipts, as was the case also in Argentina. In addition, cross-border mergers and acquisitions of companies contributed to the investment flow. Investment flows to Mexico were bolstered by trading opportunities with the economies of the United States and Canada within the context of the North American Free Trade Agreement (NAFTA). Inflows into Mexico are expected to remain strong, boosted as well by the recent signing of a free trade agreement with EU. Strong economic recovery in Brazil is expected to provide impetus for direct investment in a number of its sectors, while investment in privatizations moderates.

Direct investment inflows to Asia held steady in 1999, as reduced investment in China was offset by an increase or continued strength in flows to some of the crisis-afflicted countries, such as the Republic of Korea and Thailand.

[2] As measured by the International Finance Corporation Investable Price Index (see International Finance Corporation, *Emerging Market Factbook 1999* (Washington, D.C., 1999), pp. iii and 90-93).

[3] The discussion of inflows of direct investment in 1999 is based on data from the United Nations Conference on Trade and Development (UNCTAD), unless otherwise indicated (see TAD/INF/2834, TAD/INF/2835 and TAD/INF/2837).

Table II.3.
INFLOWS OF FOREIGN DIRECT INVESTMENT TO DEVELOPING AND TRANSITION ECONOMIES, 1996-1999

Billions of dollars

	1996	1997	1998	1999
Developing countries	137	170	171	196
Africa	6	8	9	10
Asia	84	93	87	89
South and East Asia	80	88	83	84
Western Asia	4	5	4	5[a]
Latin America	46	68	73	97
Economies in transition	15	21	22	22
Eastern Europe	13	18	19	20
Central Asia	2	3	3	2[a]

Source: Information supplied by the United Nations Conference on Trade and Development (UNCTAD) (data differ from those in table II.2, which are the net effect of domestic and foreign inflows and outflows).

[a] Estimate.

There was substantial growth in investment in Singapore and Taiwan Province of China as well. Large-scale financial and corporate restructuring and liberalization of foreign investment regulations in the Republic of Korea and Thailand provided new opportunities for cross-border mergers and acquisitions. The slower rate of investment flows to China reflected the prospect of a lower growth rate of the economy in the medium term, the slow pace of liberalization of foreign investment and, to a lesser extent, the lingering effect of the Asian financial crisis on regional investors. An increase in flows to China is expected in 2000, however, with improved outlook for economic growth and prospects for accession to the World Trade Organization.

Direct investment inflows to Africa rose substantially in 1999, although most of the increase was directed to South Africa. Other sub-Saharan countries, such as Ghana, Mozambique and Nigeria, also registered an increase in flows, as did some of the northern African countries[4]. The main impulse to the growth in direct investment was privatization, reinforced by an improving climate for foreign investors. Although investment continued to be concentrated in the natural resource sectors, there was some indication of diversification into infrastructure, telecommunication and transportation.

Foreign direct investment (FDI) in the transition economies was also resilient in the aftermath of the Russian financial crisis (see table II.3). The continued strong flows of investment into the countries of Eastern Europe were the result of large privatization receipts in countries, such as the Czech Republic and Poland. In addition, the expectation of accession of Eastern European countries to EU attracted substantial flows of direct investment from Western Europe.

Official finance for development

Official financial flows to the developing and transition economies declined sharply in 1999 from the surge in 1998, as the need for emergency financial assistance abated. Moreover, with strengthening economic recovery and

[4] See World Bank, *Global Development Finance 2000: Analysis and Summary Tables* (Washington, D.C., 2000), pp. 211 and 219.

improved access to private finance by a number of crisis-affected countries, net repayments of official loans increased. The most dramatic reversal occurred in the financing flows of IMF, the primary source of crisis assistance.

International Monetary Fund

IMF shifted from being a net provider of $14 billion to developing countries in 1998 to a net recipient of $9 billion from those countries in 1999 (see annex table A.19). There was a similar swing in financial flows to transition economies, with a net outflow of $6 billion from IMF in 1998 reversing to a net inflow of $4 billion in 1999 (table A.20). These changes also reflected other factors, such as the delays in disbursements of funds for programmes in the Russian Federation and Indonesia and the substantial repayment of prior loans made to the Republic of Korea.

Progress in financial stabilization also led to a sharp drop in new lending to developing countries in 1999. After reaching a high of $38 billion in 1997, total IMF loan commitments to the developing countries fell below $30 billion in 1998 and reached only $13 billion in 1999. Lending commitments to transition economies, however, reached $5.6 billion in 1999, the third year in a row of significant increase. The bulk was for a standby facility for the Russian Federation in support of its 1999-2000 economic reform programme.

Other multilateral funding

Total concessional and non-concessional resources committed by multilateral development institutions (MDIs) declined sharply from $62 billion in 1998 to $47 billion in 1999, or by 24 per cent in constant prices (see table A.23). The decrease was mainly the result of an end to special lending programmes for a number of countries that had fallen into financial crisis. Non-concessional lending by the World Bank dropped by 44 per cent. This was primarily because the large loans extended to Indonesia, Mexico, the Russian Federation and Thailand in support of restructuring of their financial and public sectors were not repeated in 1999. Resource commitments by the International Development Association (IDA), the concessional lending arm of the World Bank, fell by more than a fifth, reflecting a significant cutback in lending to countries in Africa and South Asia. Approvals by the International Finance Corporation (IFC), the private sector facility of the World Bank, decreased by more than 20 per cent in 1999, as they continued a downward trend that had begun in 1997. Lending commitments by the regional development banks, except the European Bank for Reconstruction and Development (EBRD), also declined.

Total lending and operational programmes in any one year mostly reflect changes in demand for funds; but over the medium run, the resources that the international community is prepared to make available to the multilateral institutions for on-lending are crucial. Negotiations for the seventh replenishment of the Asian Development Fund, the Asian Development Bank's concessional lending arm, began in late 1999 and are scheduled to be completed this year; initial discussions concerning the general capital increase of the Asian Development Bank are also set to begin soon. In response to the sharp reductions in the concessional resources of the Inter-American Development Bank, the borrowing member countries agreed to transfer, over time, to the Fund for Special Operations (FSO), the Bank's concessional lending window, some $2.4

billion of their own funds held by the Inter-American Development Bank to enable the continuance of the concessional lending and technical cooperation programme for the lower-income Latin American countries.

At the African Development Bank, concessional commitment levels continued to fall sharply owing to the delay in the effectivity of ADF VIII, the Bank's replenishment of its concessional resources for the lending period 1999-2001. Although ADF VIII was agreed in January 1999, the minimum required subscription deposits were reached only in November 1999, resulting in almost a year's wait for the funding for projects under the facility.

EBRD appears to have weathered its crisis in 1999. The combination of good operating results and continued budgetary discipline as well as a large reduction in provisioning charges connected with the Russian economic turmoil has enabled the Bank to turn a profit for the year.

The Council of Governors of the Multilateral Investment Guarantee Agency (MIGA), an arm of the World Bank that insures foreign direct investors against political and related risks, approved a $1 billion funding package in September 1999 that will double the capital base of the agency and permit a substantial increase in insurance and guarantees.

The outlook for the programmes of the operational agencies of the United Nations remains uncertain since contributions of core or regular resources are on the decline[5]. At the United Nations Development Programme (UNDP), for example, core resources have fallen annually since 1995. At the United Nations Children's Fund (UNICEF), contributions to core resources have stagnated, in real terms, since 1990. United Nations Population Fund (UNFPA) core resources increased in 1995 after the International Conference on Population and Development in Cairo; they have been declining since but countries have recently pledged increased contributions following the five-year review and appraisal of the outcome of the Conference held in June-July 1999.

[5] Core resources are contributions to the general funds of United Nations funds and programmes that can be spent on mandated programme activities, including administrative purposes, based on the approval of their respective Executive Boards. They can be supplemented by non-core resources which are contributions by donors for use in activities that they specify.

Official development assistance

Net flows of ODA in 1999 from member States of the Development Assistance Committee (DAC) of OECD increased $3.9 billion or 5 per cent in real terms in 1999, the second year of aid growth since the five years of contraction, 1992-1997. The ratio of ODA to gross national product (GNP), however, was virtually unchanged, estimated at 0.24 per cent in 1999 (see table II.4). A large portion of the increase in ODA was due to special assistance from Japan to countries affected by the Asian financial crisis and the international effort to assist refugees from Kosovo. ODA flows from Italy and the United Kingdom of Great Britain and Northern Ireland fell appreciably owing mainly to the timing of deposits to international financial institutions. Only four countries (Denmark, the Netherlands, Norway and Sweden) reached the United Nations ODA target of 0.7 per cent of GNP.

Aid flows have reflected tightening donor budgets, owing in part to donor concerns about the effectiveness of aid in raising economic growth and reducing poverty in a number of recipient countries. Donors have sought to improve the effectiveness of their own management and coordination of aid, and to help recipient countries strengthen their capacity for design and implementation of development policy and thus increase their "ownership" of aid programmes. With a number of major DAC donors continuing to limit their aid budgets, prospects for a sustained increase in ODA have not improved and the reinvigoration of ODA flows remains a challenge.

Table II.4.
OFFICIAL DEVELOPMENT ASSISTANCE (ODA) OF THE MEMBER COUNTRIES OF THE DEVELOPMENT ASSISTANCE COMMITTEE (DAC), 1999

	ODA (millions of dollars)	ODA/GNP (percentage)[a]	Real percentage, 1998 to 1999[b]
Australia	981	0.26	-1.6
Austria	482	0.24	9.6
Belgium	753	0.30	-11.6
Canada	1 721	0.28	0.2
Denmark	1724	1.00	2.7
Finland	402	0.32	4.9
France	5 494	0.38	-0.5
Germany	5 478	0.26	1.4
Greece	260	0.21	46.3
Ireland	241	0.31	22.8
Italy	1750	0.15	-20.8
Japan	15 302	0.35	26.2
Luxembourg	115	0.64	5.9
Netherlands	3 134	0.79	6.1
New Zealand	134	0.27	4.1
Norway	1 370	0.91	0.5
Portugal	274	0.25	8.1
Spain	1 347	0.23	-0.8
Sweden	1 643	0.70	8.1
Switzerland	976	0.35	11.9
United Kingdom	3 279	0.23	-15.6
United States	9 135	0.10	2.5
Total DAC	55 993	0.24	4.9
Average country effort (unweighted)	..	0.39	..
Memorandum items:			
EU countries combined	26 376	0.31	-2.0
European Commission	5 198	..	4.9

Source: Organisation for Economic Cooperation and Development, press release PAC/COM/News (2000) 44, 12 May 2000.

[a] DAC members are progressively introducing the new System of National Accounts. This is leading to slight upward revisions of gross national product (GNP), and corresponding falls in reported official development assistance (ODA)/GNP ratios.

[b] Taking account of both inflation and exchange-rate movements.

Official debt relief for heavily indebted poor countries (HIPC)

The seven major industrialized countries agreed at their summit at Cologne in June 1999 to enhance debt relief provided within the framework of the HIPC Initiative, recognizing the need for "faster, deeper and broader debt relief for the poorest countries that demonstrate a commitment to reform and poverty alleviation."[6] A few months later, in September 1999, the necessary modifications to the HIPC initiative were endorsed by the Interim and Development Committees at the annual meetings of the World Bank and IMF.

The enhanced HIPC programme speeds relief through more interim assistance between the "decision" and "completion" points of the debt-reduction process.[7] It also expedites the relief accorded at the completion point by introducing "floating completion points", as a way of accelerating the process when

6 See Group of Seven (G7) statement at the Köln Economic Summit, 18 June 1999.

7 For a definition of the terms "decision point" and "completion point", see "Debt initiative for the heavily-indebted poor countries (HIPCs)", International Monetary Fund, 7 April 2000, available at: http://www.imf.org/external/np/hipc/hipc.htm#mods.

the set of reform commitments are rapidly fulfilled. Previously, three years were required before according relief. In addition, the programme deepens debt relief by lowering the level of debt deemed to be sustainable.[8] It will also base calculations of required debt relief on data available at the decision point rather than on projections at the decision point of what is expected to obtain later at the completion point. It was estimated that the external debt of the HIPC countries would decline by about 60 per cent of its 1997 value as a result of full application of the debt-relief mechanisms available under the Enhanced HIPC Initiative. Finally, it also introduces new targets, so as to raise the number of countries participating from 29 to 36.[9]

Implementation of the Enhanced HIPC Initiative has been slower than expected when the programme was adopted, as it has taken time to put the improvements in place. By April 2000, debt-relief agreements had been put in place for only five countries (Bolivia, Mauritania, Mozambique, Uganda and the United Republic of Tanzania), totalling about $4.4 billion in debt relief in net present value (NPV) terms[10]. This fell short of expectations when the enhanced HIPC Initiative had been adopted, namely, that up to 11 countries would have benefited from the initiative by that date. Indeed, by April 2000, the Executive Board of IMF and the Board of Executive Directors of the World Bank had reviewed eligibility under the HIPC Initiative for only 16 countries, although preliminary eligibility had also been reviewed for an additional 5 countries.[11]

Most of the debt reduction is similar in nature to a purchase of outstanding loans by a refinancing agency which then forgives some or all of the claims and reschedules the rest. One requirement for faster implementation was sufficient funding. As a result of the enhanced provisions, the cost of the HIPC Initiative is likely to more than double to about $28 billion in NPV terms for the 32 countries currently expected to qualify, out of the 36 potentially participating in the Initiative[12]. Funding arrangements have been complicated by the large number of involved multilateral institutions and bilateral creditors. IMF's contribution ($2.3 billion in NPV terms) is to be financed largely by the transfer of investment income on profits from off-market gold sales completed in April 2000. The contributions of the World Bank ($6.3 billion in NPV terms) and of regional development banks and other multilateral creditors ($5.5 billion in NPV terms) are to be financed largely through bilateral contributions to the HIPC Trust Fund managed by the World Bank. By April 2000, the HIPC Trust Fund had obtained only about $2.4 billion in bilateral contributions and pledges from about 20 countries.[13]

As part of the enhanced debt-relief effort, Paris Club creditors have agreed to increase debt reduction in NPV terms by up to 90 per cent, and more in individual cases, if needed, on loans originally made on commercial terms. They will also provide additional relief on ODA claims. Other official and commercial creditors are expected to provide debt relief for HIPCs comparable with that offered by Paris Club members. However, a number of HIPCs have encountered difficulties in obtaining sufficient debt relief from bilateral creditors that do not participate in the Paris Club, including other developing countries. On the other hand, all members of the Group of Seven have pledged to write off 100 per cent of eligible debt owed to them by HIPCs. Nevertheless, a stronger effort by the international community to provide the requisite financing is required if the programme is to succeed.

8 The target debt-to-export ratio has been reduced to 150 per cent from 200-250 per cent and the debt-to-fiscal revenue ratio has been reduced to 250 per cent from 280 per cent.

9 The thresholds with respect to qualifying for HIPC relief have been lowered from 40 to 30 per cent for the export-to-GDP ratio and from 20 to 15 per cent for the revenue-to-GDP ratio (see "Debt relief for low-income countries: the Enhanced HIPC Initiative", International Monetary Fund, Pamphlet Series, No. 51, 1999, available at: http://www.imf.org/external/pubs/ft/pam/pam51/contents.htm).

10 The net present value of debt is the sum of all future debt-service obligations on existing debt, discounted at the market interest rate.

11 These were Ethiopia and Guinea-Bissau under the original framework and Guinea, Honduras and Nicaragua under the enhanced framework (see http://www.worldbank.org/hipc/progress-to-date/progress-to-date.html). Also, in view of exceptional circumstances, Paris Club bilateral creditors decided in March 2000 to suspend Mozambique's debt repayments to allow the country to start rebuilding in the wake of torrential rains and devastating floods.

12 Excluding Ghana, which has not requested assistance, Liberia, Somalia and the Sudan.

13 See: http://www.worldbank.org/hipc/progress-to-date/HIPCTF_041800.pdf.

In the light of these developments, some observers have expressed concern about the HIPC programme. One concern is that official debt relief will be financed through a diversion of development assistance, leaving HIPC countries still starved for development resources. It has also been argued that even the recent enhancements have not deepened debt relief sufficiently to allow Governments to meet the social and development needs in their countries. Some non-governmental organizations have demanded more radical action from the creditors so that debtor countries can pay less than 10 per cent of government revenues in debt service.[14]

The report of the Secretary-General to the Millennium Assembly of the United Nations entitled "We the peoples: the role of the United Nations in the twenty-first century" has thus proposed new steps for handling the debt problem[15]. These include immediate cancellation of the debts owed by countries that have suffered major conflicts or natural disasters, expanding the number of countries in the HIPC Initiative by allowing them to qualify on grounds of poverty alone, pegging maximum debt repayments at a fixed percentage of foreign exchange earnings, and establishing a debt arbitration process to better balance the interests of creditors and sovereign debtors and introduce greater discipline in their relations, while speeding resolution of the debt situation.

Finally, the international community sought assurances that resources freed from debt servicing would be applied to poverty reduction programmes. The mechanism introduced to this end requires that HIPC countries have poverty eradication strategies formalized in "poverty reduction strategy papers" approved by the Board of Executive Directors of the Bank and the Executive Board of the Fund.

The new international focus on poverty eradication in low-income countries

Frustrated by the slow progress in poverty eradication in most developing regions, international attention has focused on poverty during much of the 1990s, as reflected in the agreements adopted at United Nations conferences, particularly the World Summit for Social Development held in 1995[16]. In this spirit, the World Bank and IMF agreed in September 1999 to collaborate on a new anti-poverty initiative in their assistance programmes for low-income countries. The approach calls for the development of Poverty Reduction Strategy Papers (PRSPs) by those countries. With the assistance of the Bank and Fund, Governments would establish poverty reduction programmes and targets within the context of a broad framework of international development goals, building on a foundation of sound macroeconomic and structural policies. To promote national ownership of policy design, the strategies are to be developed through a broad participatory process, including civil society. The involvement of key donors is also encouraged with an eye to better aligning their assistance programmes with these strategies.

The PRSPs are to be required for concessional borrowing from IMF and the World Bank, in particular through the renamed Poverty Reduction and Growth Facility (PRGF) (formerly the Enhanced Structural Adjustment Facility (ESAF)) and IDA, respectively. They are to be required, in the first instance, from HIPC countries, although the desire not to delay HIPC agreements entails interim PRSPs adopted through foreshortened processes.

14 See "Outcome of the IMF/World Bank September 1999 Annual Meetings: implications for poverty reduction and debt relief", Oxfam Policy Paper, October 1999, available at: http://www.oxfam.org.uk/policy/papers/wbimf.htm.

15 See document A/54/2000, paras. 178-188.

16 See the Copenhagen Declaration on Social Development and the Programme of Action of the World Summit for Social Development, *Report of the World Summit for Social Development, Copenhagen, 6-12 May 1995,* (United Nations publication, Sales No. E 96. IV.8), chap. I, resolution 1, annexes I and II).

The resource requirements for developing PRSPs call for a major commitment of time of government officials and the political process, and also represent a challenge to the institutional capacity of many of these countries. It is also a challenge to donor coordination, programmatic as well as in terms of resource mobilization. Thus, the Bank and the Fund established at the 2000 spring meetings, a joint implementation committee to facilitate effective implementation of both the Enhanced HIPC Initiative and the PRSPs.

Reform of the Bretton Woods institutions

There has been growing debate about reform of the main pillars of the system of multilateral financial cooperation, the Bretton Woods institutions. Some have claimed that in recent years IMF had overreached itself when it introduced broad institutional reform policies into negotiated agreements supported by IMF lending and, more recently, when it called for policy dialogues on social issues in low-income countries, in particular concerning poverty reduction.

Some critics have argued that the Fund should focus on its original functions, which encompass surveillance of core macroeconomic issues and international financial developments, with a view to effecting crisis prevention and, when the need arises, crisis management. A major aim of some participants in the current debate is thus to refocus IMF in order to better support member countries in their efforts to regain and maintain macroeconomic and financial stability, as well as to promote the stability of the world monetary system as a whole. In the view of the critics, the World Bank, in turn, would then focus more sharply on the support of economic development and poverty reduction in developing and transition economies in the context of globalization. Moreover, specialization on the part of IMF and the World Bank according to their respective major competencies, and cooperation without duplication are thought to be important in improving their efficiency.

Along with clearer delineation of responsibilities, the current debate highlights the salience of governance to the continued credibility and effectiveness of both institutions. There is thus broad agreement on the need for transparency in the operations of the Bretton Woods institutions. In response, both IMF and the World Bank have launched several initiatives aimed at providing the public with more information. It is recognized, however, that further steps should be taken to make the presentation of information about their financial operations clearer and more understandable to the public. In addition, there is growing concern that the degree of representation in the Bretton Woods institutions does not adequately reflect the growing economic role of developing and transition economies in the global economy.

This, moreover, is only part of the debate that has engaged the international community. On the one hand, the international financial architecture encompasses a larger set of institutions than the Bretton Woods institutions, including, for example, the committees affiliated with the Bank for International Settlements that deal with standards of national prudential regulation of financial institutions. On the other hand, the various bodies differ considerably in their degree of representativeness. There is also a concern about adequate sensitivity to distinct needs and constraints on individual countries. Clearly, the beginning of the new century is a time for deep consideration of the future of international monetary and financial cooperation.

III THE CURRENT SITUATION IN THE WORLD'S ECONOMIES

The global economy is emerging from the financial crisis that occurred in 1997-1998. The rate of growth of world output accelerated in 1999 and is expected to increase further in 2000 as countries strengthen their recoveries. In all country groupings—developed countries, developing countries and economies in transition—economic growth in 1999 was faster than in 1998. In several ways, 1999 was a year of surprises, most of them positive.

The recovery of developing countries and economies in transition hard hit by currency and financial crises has been faster than anticipated. Economic growth returned to the East Asian countries and the Brazilian and Russian recessions turned out to be surprisingly shorter than anticipated; recovery from the social consequences of the crisis will take some time, however. Growth in both developing countries and economies in transition is expected to increase further in 2000, with the former returning to rates of growth observed before the crises and all countries in the latter group expected to record positive growth for the first time since transition started. The anticipated strengthening of world demand, some recovery in financial inflows, and the stabilization of commodity prices in 2000 will contribute to the improvement for developing and transition economies, but higher interest rates will partially offset these positive aspects.

The continuation of the economic expansion in the United States of America was again important in sustaining international trade and external demand for a number of other economies. Fast growth in the United States, however, has been accompanied by an increasing trade deficit and has raised concerns about the overheating of the economy. As a result, there has been a tightening of monetary policy, with other market economies following suit. Notwithstanding this, the United States is expected to have another strong performance in 2000. Prospects are also positive for Western Europe due to the recovery of exports and buoyant domestic demand brought about by lower unemployment and increased consumer confidence. On the other hand, the Japanese economy recorded only modest growth in 1999, despite substantial fiscal stimulus, and its growth will remain sluggish in 2000.

DEVELOPED ECONOMIES

Gross domestic product (GDP) growth accelerated in the developed economies in 1999, supported by the continued strong performance of the United States economy and a better—albeit erratic—performance of Japan's. In the former, growth is primarily attributable to the dynamism of the private

sector, including strong consumer demand and fast business investment growth, whereas public spending is a major underlying factor in the latter. In Europe, economic growth was weak in the beginning of the year owing to the lingering effects of the Asian crisis, which curtailed demand for European exports, while domestic consumption remained robust. Among the large European economies, Germany and Italy were particularly hard hit. As international trade rebounded during the year, economic activity picked up in Europe, but only a few economies were able to improve upon their 1998 economic performance. Elsewhere, Canada and Australia recorded strong growth, and the economy of New Zealand recovered from the recession of 1998 (see table A.2).

A positive feature in the economic performance of developed economies in 1999 was the decline of unemployment, within an environment of benign inflation and strengthened fiscal positions, with Japan being a notable exception. On the other hand, the external imbalances among the major economies persisted as the United States current-account deficit increased during the year and the United States economy continued to attract large volumes of international financial resources.

Despite the recent tightening of monetary conditions, the outlook for 2000-2001 for this group of countries is positive. The United States economy is expected to have another strong performance in 2000. Economic growth will pick up in Europe as exports respond to the improved international environment and the positive impact on employment and incomes will fuel consumption and investment. Conversely, economic growth will remain modest in Japan, owing to continued uncertainties over the restructuring of the economy and its negative impact on consumer confidence and domestic demand.

North America: the longest expansion

The economic performance of North America continued to be extraordinary in 1999, as output rose more than 4 per cent, inflation remained subdued, and unemployment declined during the year in both Canada and the United States. While continuing with the ongoing pre-emptive tightening of monetary policy could eventually slow the current expansion in the United States, there are currently no significant signs pointing to an abrupt slowdown in these two economies. However, inflationary pressures appear to be gradually building up and the trade deficit has reached record highs.

The economy of Canada registered robust growth in 1999, with output increasing 4.2 per cent, the unemployment rate having dropped to 7 per cent by the end of the year—its lowest level in two decades—and inflation remaining under 2 per cent. While increases in consumption and government expenditure have been moderate, investment spending and inventory accumulation have been strong. The buoyancy of external demand, particularly from the United States, has also been an important force driving the economy, resulting in a large merchandise trade surplus. In the short- and medium-term outlooks, economic growth for the Canadian economy is expected to be about 3½-4 per cent.

In March 2000, the United States set a new record for the longest period of economic expansion in its history, with real economic activity rising for 108 consecutive months. It is not only the length but also the strength of the ongoing expansion that is notable, as the increase in GDP accelerated to an annual rate of 7.3 per cent during the last quarter of 1999 and core inflation remained tame (see table III.1). Nonetheless, the rapid pace of output growth has tight-

Table III.1.
MAJOR INDUSTRIALIZED COUNTRIES: QUARTERLY INDICATORS, 1998-1999

	1998 quarter				1999 quarter			
	I	II	III	IV	I	II	III	IV
	Growth of gross domestic product[a] (percentage change in seasonally adjusted data from preceding quarter)							
Canada	3.1	1.4	1.7	4.8	4.1	3.1	4.7	4.6
France	3.8	3.5	1.8	2.7	1.8	3.4	3.9	3.6
Germany	4.1	0.0	1.2	-0.8	2.4	0.4	3.6	2.7
Italy	-1.9	2.0	2.4	-1.8	1.3	2.2	3.1	1.7
Japan	-4.6	-0.8	-4.8	-2.0	6.3	3.9	-3.9	-6.4
United Kingdom	1.9	1.9	1.9	0.0	1.5	3.0	4.1	3.3
United States	6.7	2.1	3.8	5.9	3.7	1.9	5.7	7.3
Total	2.4	1.2	0.9	2.0	3.8	2.4	2.6	2.4
	Unemployment rate[b] (percentage of total labour force)							
Canada	8.6	8.4	8.3	8.0	7.9	7.8	7.6	7.0
France	11.9	11.7	11.7	11.6	11.7	11.2	11.2	10.8
Germany	9.8	9.5	9.2	9.2	8.8	9.1	8.7	8.7
Italy	11.8	11.9	11.9	11.8	11.6	11.4	11.2	11.1
Japan	3.7	4.1	4.2	4.4	4.6	4.7	4.7	4.7
United Kingdom	6.4	6.3	6.3	6.3	6.3	6.1	6.0	5.9
United States	4.6	4.4	4.5	4.4	4.3	4.3	4.2	4.1
Total	6.4	6.3	6.4	6.3	6.3	6.3	6.1	6.0
	Growth of consumer prices[c] (percentage change from preceding quarter)							
Canada	2.1	1.2	0.3	0.7	0.8	4.4	2.9	1.3
France	0.4	1.9	-0.9	-0.1	0.1	2.4	-0.3	1.7
Germany	0.9	1.9	1.1	-1.4	0.3	2.2	1.7	-0.2
Italy	2.8	1.8	1.3	1.0	1.4	2.3	1.8	2.7
Japan	-1.6	2.0	-2.2	4.0	-3.9	1.3	-1.2	0.0
United Kingdom	1.3	7.6	1.3	1.8	-1.7	4.3	0.3	3.0
United States	1.1	2.2	1.6	1.4	1.6	3.9	2.5	2.5
Total	0.5	2.3	0.3	1.6	-0.3	2.9	1.1	1.5

Source: UN/DESA, based on data of International Monetary Fund (IMF), Organisation for Economic Cooperation and Development (OECD) and national authorities.

[a] Expressed at annual rate (total is weighted average with weights being annual GDP valued at 1995 prices and exchange rates).
[b] Seasonally adjusted data as standardized by OECD.
[c] Expressed at annual rate.

ened the labour market. So far, however, productivity increases and international competition have restricted the scope for significant price increases.

Productivity growth has been accelerating in the United States in recent years. In 1999, labour productivity rose over 3 per cent, with a surge of 6.9 per cent in the fourth quarter, much higher than the average 1½ per cent annual gain recorded over the past two decades. While productivity growth has long been strong in the computer-hardware sector, the recent pickup has been broad-based. Higher productivity growth implies a higher potential rate of non-inflationary total output growth; this is now estimated to be on the order of 3½-4 per cent a year, much higher than the 2½ per cent that has traditionally been assumed.

The sustained period of economic growth in the United States during the 1990s has in many respects differed significantly from previous business cycles, leading some observers to believe that the United States has transformed itself into a "new economy". In this view, higher productivity growth is seen as mainly attributable to the information technology revolution, as well as to other factors such as capital deepening and improvements in labour quality (see chap. I). These factors are not likely to fade in the short and medium term, leading to an optimistic assessment of the sustainable pace of productivity growth of some 2½-3 per cent per year. A caveat is that past productivity growth has tended to be pro-cyclical.

In the current expansion, consumption has been increasing rapidly owing to real wage gains, high consumer confidence and a strong appreciation in equity markets and real estate over several years. After an increase of 5½ per cent in 1999, strong consumer demand is expected to continue in 2000-2001. Over the medium term, the saving rate is expected to return to normal levels (4 to 6 per cent) whereas the strong employment gains and capital gains are expected to moderate. Thus, a slowdown in consumption demand is anticipated, as the saving rate is likely to recover.

Business investment has also been growing rapidly, particularly spending on information-processing hardware and software. Investment in equipment and software rose by 12 per cent in 1999; of this, spending on computing and related peripheral equipment was up about 40 per cent. Because information technology innovation continues at a rapid pace, investment in this area is expected to remain strong. In contrast, other investment outlays are seen as likely to decelerate in response to higher interest rates, excess capacity and a sluggish rise in profits in traditional economic sectors.

The rapid pace of output growth has, however, tightened the labour market in the United States. The unemployment rate fell to 4 per cent by the end of the year, while real wages increased for the fifth year in a row. The consumer price index (CPI) rose by 2.2 per cent, which was greater than the 1.6 per cent increase in 1998. Nonetheless, it has been argued that the sharp rebound in the price of oil was the main factor leading to the more rapid rise in prices. The core CPI, which excludes food and energy prices, signals that there has not thus far been a significant pass-through of oil prices to the rest of the economy. Inflation remained benign in 1999 owing to rising productivity, increased global competition, disciplined fiscal policy and the strong dollar. With these factors remaining in place, inflation, which was on a rise in the first few months of 2000, is expected to remain under control in the medium term.

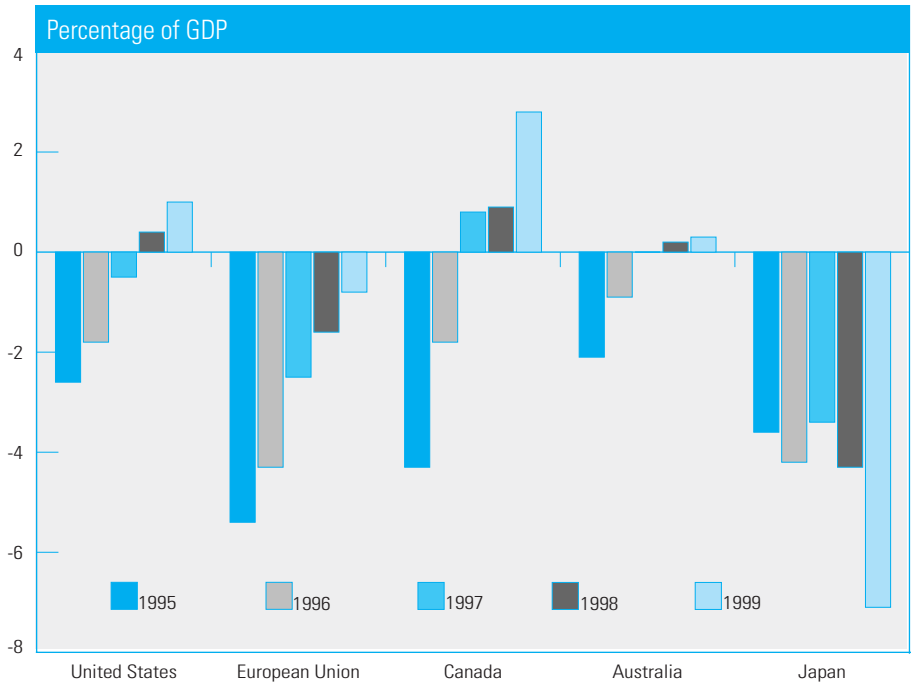
Fiscal policy in the United States has in general been restrained, as government spending has been rising at a rate slower than the growth of GDP and government revenue. As a result, the surplus in government accounts is estimated at $150 billion in 1999, up from $58 billion in 1998. The federal budget plan released in February 2000 showed an increase in spending of 2½ per cent during fiscal 2001, lower than the projected GDP growth rate. Unless major changes in taxation are enacted, the strength of the economy will continue to bolster tax revenues. Consequently, the federal surplus is expected to rise further, reaching over $200 billion per year over the course of the next few years. Similarly, the Canadian economy has been in a solid fiscal position, with the public budget in surplus for the third consecutive year (see figure III.1) at an estimated Can$ 8 billion for fiscal 1999.

The large budget surplus in the United States has generated a number of proposals on the possible use of these funds. Three alternatives have been contemplated: lower taxation, increased spending and the retirement of government debt. While political groups have placed different emphasis on these proposals, the United States Administration in its budget plan for fiscal 2001 envisages a modest tax reduction, with most of the projected surplus being used to reduce the federal public debt. [1]

Canada, on the other hand, has opted for a different approach in its use of the budget surplus. The two-year budget for 2000-2001, released in February 2000, marks a transition in fiscal strategy from the stabilization programme of the mid-1990s to one that addresses problems in the tax system by focusing almost exclusively on tax reduction. Emphasis was thus shifted from the expen-

[1] Additionally, owing to the public budget surplus, the United States Treasury has announced plans to reduce the availability of long-term bonds. As a result, yields on long-term securities declined, at times falling below those on short-term instruments. Such an inverted Treasury yield curve has often suggested an economic recession, but in this case it indicated an expected shortage of long-term paper.

Figure III.1.
SELECTED DEVELOPED MARKET ECONOMIES: GENERAL GOVERNMENT BALANCES, 1995-1999



Source: UN/DESA, based on IMF and national sources.

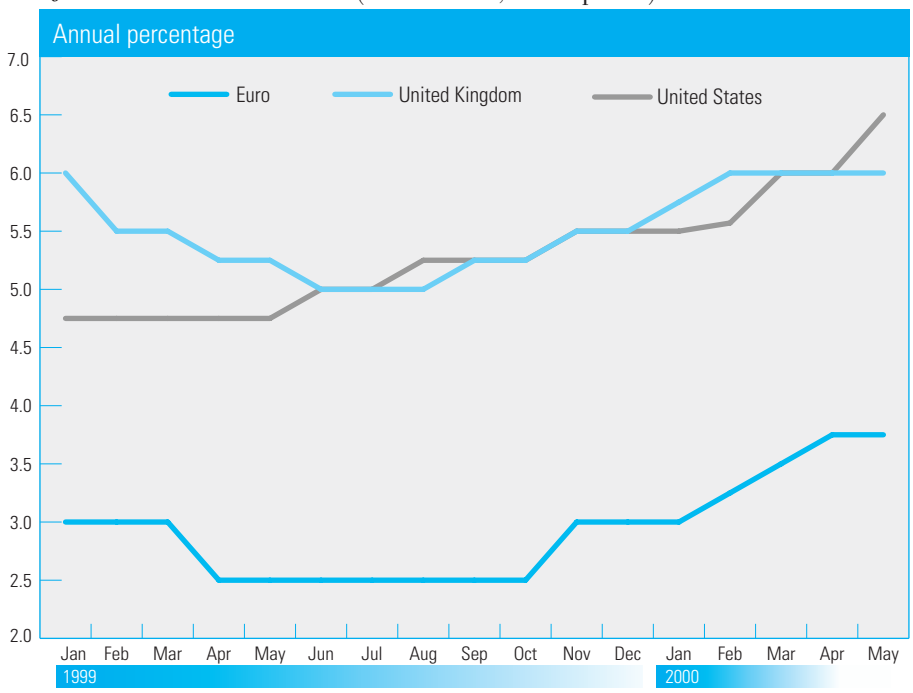
Note: United States data refer to central government fiscal balance on a budget basis.

diture to the revenue side of the budget. Additionally, the Government will continue to use—as it did in 1997 and 1998—some of the surplus to pay down the public debt. As a result of these operations and the projected balanced budgets, the ratio of government debt to GDP is expected to decline to 55 per cent in fiscal 2001, well below its high of 71 per cent in 1995.

One consequence of the notable performance of the United States economy has been the growth of imbalances that may not be sustainable in the medium term. The deficit on current account, for example, reached a record high of over 4 per cent of GDP, more than $300 billion in 1999, and widened further during the early months of 2000. Valuations in equity markets have risen much faster than the improvement in economic fundamentals appears to warrant and, in spite of recent drops, remain at levels that are exceptionally high by any traditional benchmark. The propensity of households to save out of current income has declined to below zero. Households on average now rely on capital gains from equity markets and real estate to finance present and future spending needs. Finally, that both the household and corporate sectors have been borrowing well beyond historical norms has led to record levels of private sector debt.

The challenge before policy makers is to avoid a sharp downturn in the economy. The Federal Reserve has adopted a pre-emptive approach and raised interest rates six times, for a total of 175 basis points, in the period between mid-1999 and May 2000 (see figure III. 2). These increases more than reversed the three reductions made in the fall of 1998 in response to the international financial crisis.

Figure III.2.
SELECTED DEVELOPED ECONOMIES: SHORT-TERM INTEREST RATES, JANUARY 1999-MAY 2000 (Annual rates, end of period)



Sources: European Central Bank, Bank of England and Federal Reserve Board.

Interest rates were also raised in Canada, but only by 125 basis points so far. To date, the inflation rate has been around the mid-point of the target band of 1-3 per cent set by the authorities. However, at the current strong pace of growth, spare capacity is likely to be reduced substantially in 2000-2001. Furthermore, the recent rebound of international prices of many commodities produced and exported by Canada is a source of stimulus both to Canada's economic activity and to its general price level. Therefore, inflationary pressures may build up, requiring further increases in interest rates in 2000.

Although the economy of the United States is expected to continue its expansion during 2000 and 2001, there are several downside risks. A large and sudden decline in equity markets, for example, could depress consumer demand and lead to lower growth. Alternatively, over tightening by the Federal Reserve could trigger a downturn in spending and production. On the other hand, the United States economy may continue to grow at its current robust pace for the foreseeable future. Technological innovation and globalization may continue to support an expansion of the new economy and offset, if not eliminate, any cyclical downturn in the traditional economic sectors.

Asia and the Pacific: Japan still fragile

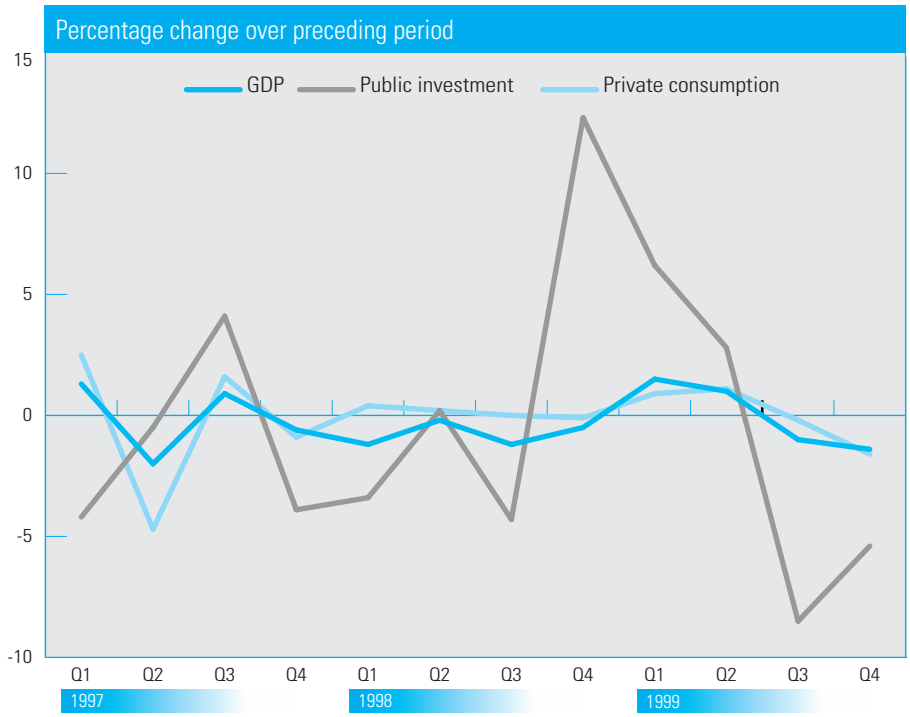
Following a steep recession in 1998, when real output dropped by 2.5 percent, the economy of Japan grew very slowly in 1999, recording only a 0.3 per cent increase in GDP, as weak domestic demand continued to constrain economic activity. In 2000 and 2001, GDP is forecast to rise 1 per cent and 2 per cent, respectively, but the economic situation and prospects for Japan continue to be fragile.

The economy began in 1999 with an unexpected spurt in economic activity, attributed mainly to substantial increases in public spending that had formed part of a stimulus package implemented in 1998. However, the package failed to elicit a sustained increase in demand from the private sector, and the upturn in economic activity sputtered before the economy contracted and slipped back into recession during the second half of the year (see figure III.3).

Weak private consumption has been a major depressing factor, as indicated by the falling retail sales for 36 months in a row by March 2000. Its origin lies in the continued deterioration in employment and incomes. The unemployment rate reached almost 5 per cent of the workforce in mid-1999, the highest level since post-war stabilization, and the ratio of job offers to job applicants declined to its lowest level in decades. Although both indicators improved marginally at the beginning of 2000, such gains may not be sustained in the short run. Wages and compensation of employees have been on a declining trend since 1998. While part of the unemployment might be cyclical, structural problems also exist, as high-skilled workers particularly in the information and communications technology (ICT) sectors are in short supply. Corporate restructuring, aimed at cutting redundant employees, reducing debt and eliminating idle capacity, is expected to continue to exert pressure on employment and income in the short run. The outlook for a recovery in private consumption therefore remains gloomy.

Business investment, which had been on a sharp downward trend since 1997, finally started to rebound in mid-1999, led by investment in ICT. These

Figure III.3.
JAPAN: QUARTERLY RATES OF REAL GDP GROWTH, 1997-1999



Source: Economic Planning Agency of Japan.

two sectors are booming, with robust growth of production, increased new job offerings, and rising stock prices. Investment spending on ICT is low in Japan, in comparison with other developed economies, leading to optimism that a rapidly growing ICT sector could drive the rest of the economy onto a path of sustained recovery. Although many traditional sectors still have excess capacity, industrial production has been on an upward trend and is expected to remain firm. Investment in those sectors is also expected to increase as a result of a continued improvement in financing conditions and in the profitability of firms, along with further progress in corporate restructuring. Investment in housing, on the other hand, is forecast to remain stagnant.

In general, the external sector has been favourable to economic growth since mid-1999, when international trade started to recover from the 1997-1998 financial crisis. With the recovery of many crisis-hit Asian countries and strong economic growth in the United States, exports from Japan have been increasing. At the same time, imports have been trending upward, especially capital goods and related ICT goods. The appreciation of the yen during the second half of 1999 generated some concerns about possible downward pressures on exports, but since the beginning of 2000 the yen has depreciated to levels that are considered to be less unfavourable for export competitiveness.

Japan experienced mild price deflation in 1999, with a decline in the CPI of 0.3 per cent during the year. While weak domestic demand has contributed to this trend, efficiency improvements on the supply side stemming from the ICT revolution have also been important. Given the degree of slack in the economy, inflation is expected to remain tame.

Policy measures have played an active role in attempts to revive the economy. The Bank of Japan, now formally independent, has held the inter-bank overnight interest rate to near zero since early 1999, while the Government has extended credit lines, especially to small- and medium-sized firms, in order to further relax credit conditions. Private financial institutions remain cautious, but major banks are gradually becoming more active lenders. However, credit demand of private firms remains stagnant, as many firms continue to restructure their balance sheets by reducing debt. The accommodative monetary policy is expected to continue in 2000.

Several fiscal stimulus packages were implemented in the 1990s, but their effectiveness was limited. In order to generate a strong and sustained recovery in November 1999, the Government unveiled another new and long-awaited stimulus package totalling 18 trillion yen ($170 billion). The package includes spending on infrastructure projects, such as a highway network and an information-telecommunications network. It also contains an allocation for loans to small- and medium-sized enterprises (SMEs), and measures for job creation, employment stability, and housing finance. Direct government spending on infrastructure, at about 6.8 trillion yen ($65 billion), is forecast to boost GDP growth by 1½ per cent in 2000.

Fiscal expansion in Japan appears to have reached its limit, as the government deficit is now estimated to be about 8 per cent of GDP (see figure III.1). The additional bond issue of around 6 trillion yen required to finance the latest package is likely to push the ratio of public debt to GDP to the highest level among developed economies. This is expected to complicate debt management, a fact which has already generated some concern in international financial markets. Other downside risks include high uncertainty about the short-term effects of the ongoing corporate restructuring on production capacity and employment, and therefore on aggregate demand. Similarly, the problem of bad loans, though improving, still remains an obstacle to any sustained business recovery.

Elsewhere in the region, Australia and New Zealand recorded more positive, though distinct, performances in 1999: Australia sustained another year of above-trend growth and New Zealand achieved a modest recovery from its mild recession. This divergence in growth trajectories is expected to narrow substantially in 2000, with Australia's GDP increasing by 3 per cent and New Zealand's by 4½ per cent.

The year 1999 marked the eighth year of continuous GDP growth in Australia. Household demand has been surprisingly vigorous, fuelled by income gains from rapid employment growth, wealth effects from asset appreciation, and easy credit. These conditions facilitated a strong expansion of consumption and spending on housing. Gross household debt has been rising, but from a rather low base, so that household balance sheets remain sound. Business sentiment continued to improve during 1999, following declines during the Asian financial crisis. Corporate profits rose by 11 per cent, as sales and production registered solid increases in both manufacturing and services. However, the growth of total business investment decelerated, largely because of a decline in investment in the mining and quarrying sector, and a slowdown in construction. On the other hand, investment in equipment and software, especially ICT, grew strongly. Recent surveys of consumer and business sentiment point to continued strong domestic demand, leading to an optimistic outlook for growth in 2000-2001.

Economic activity in New Zealand, on the other hand, exhibited considerable volatility during the past two years. A modest recovery started in mid-1998 but was interrupted by a dip of 0.3 per cent in GDP in the second quarter of 1999. However, the economy bounced back strongly in the second half of 1999, supported by rising exports, a turnaround in consumption expenditure, and a strong pickup in agricultural production.

Reflecting its stronger and more stable growth, the labour market in Australia in 1999 was tighter than that in New Zealand. Inflation remained at about 1½ per cent for 1999 as a whole in both economies, but observed inflation rates and inflation expectations edged up modestly in the second half of the year. Although forecasts for inflation point to some increase in 2000, rates are expected to remain below the 3 per cent inflation target set by the central banks of these countries.

With regard to economic policy, the stimulative effects of the low interest rates maintained by the Reserve Bank of Australia since the Asian crisis have contributed to offsetting global deflationary forces. The monetary policy of the Reserve Bank of New Zealand was also accommodative during most of 1999. However, since mid-November 1999, both central banks have raised policy interest rates. By May 2000, both the Reserve Bank of Australia and the Reserve Bank of New Zealand had increased interest rates, by 125 and 175 basis points, respectively, and further tightening is likely.

Government budgets are in surplus for both economies. In Australia, tax revenues are expected to fall somewhat in 2000-2001, as a new 10 per cent Goods and Services Tax (GST) will be effective in July 2000 in association with an abolition of the Wholesale Sales Tax and cuts in income taxes. In New Zealand, fiscal policy is likely to remain neutral in 2000-2001.

Both Australia and New Zealand have widening current-account deficits. These both amounted to about 6 per cent of GDP in 1999 and do not appear to be sustainable at their current level. While strong import demand was the main reason for the large deficit in Australia, in the case of New Zealand the deterioration in its terms of trade was a contributing factor. Additionally, both countries also experienced a sluggish export demand in the early months of 1999. While the external imbalance needs to be addressed, a sharp correction could present a major downside risk to these countries' outlook.

Western Europe: faster growth and lower unemployment

The current expansion in Western Europe, which started in the second half of 1999, is accelerating and is expected to yield growth of about 3 per cent in 2000, after registering 2.3 per cent in 1999. The continuing effects from the East Asian and Russian crises had depressed export growth, leading to a sharp decline in the manufacturing sector; strong consumption growth provided a cushion, however. With the pickup in world economic activity in the second half of 1999, exports recovered sharply and manufacturing rebounded. Earlier concerns over the fragility of the recoveries in Germany and Italy have been mostly allayed, as recent indicators point to sustained, though moderate, growth. Thus, the region will complete a full recovery from the weak growth experienced in the first half of 1999. Strong performances are expected in France, Spain and the United Kingdom of Great Britain and Northern Ireland in 2000, while some of the smaller economies in the region will continue to grow briskly (see table A.2).

One of the most positive factors in the region in 1999 and in the near-term outlook has been the performance of consumption expenditure. This had been a major constraint on growth during the 1990s. Strong employment growth—coupled with moderate wage gains, very low rates of inflation, and tax relief in some countries—boosted disposable income. In the course of 1999, consumer confidence subsided from the record highs registered at the beginning of the year, but then had moved up sharply at the end of the year and, in early 2000, hit new highs. This, together with the favourable overall growth profile, should lead to continuing strong consumption demand in 2000.

Growth of investment remained weak at the beginning of 1999, but recovered in the second quarter, showing moderate strength for the rest of the year. The outlook for 2000 is positive. Accelerating growth, notably of exports, coupled with increasing rates of capacity utilization should be highly supportive. In addition, despite the recent rise in short-term interest rates and the gradual rise envisaged in the future, real short-term rates are still low and should provide further stimulus.

Exports picked up strongly in the second half of 1999 and are expected to further strengthen in 2000 and 2001. Foreign demand is buoyant, from North America in particular, but also from Asia, and the broad recovery across Europe is generating increased intra-European trade. In addition, the continuing weakness of the euro has boosted export competitiveness. Continued strong performance is anticipated for 2000, with some moderation in 2001 owing to the probable strengthening of the euro and less robust foreign demand. Imports were also affected by the slowdown at the beginning of 1999, but were supported by strong consumption growth. They have since strengthened in line with the recovery. As a result, net trade represented a negative contribution to growth at the beginning of 1999, but this changed in the second quarter as export growth accelerated; it is expected to be a positive impetus to growth in 2000.

Industrial production, particularly manufacturing, was hit hard by the crisis but accelerated in the second half of the year in line with the recovery in exports. Industrial confidence, which had weakened substantially at the beginning of 1999, recovered in the second quarter of the year and has since improved in parallel with strong consumer confidence. Recent production data yield a mixed picture, though they may be revised upward, as initial estimates tend to miss a large proportion of smaller firms. Other indicators of industrial activity, such as order books in the manufacturing sector and capacity utilization, continue to indicate considerable strength in the first quarter of 2000.

The inflation situation has turned around. At the beginning of 1999, there were concerns about deflation stemming from the slowdown in activity, the significant drop in oil prices over the course of 1998, and general weakness in non-oil commodity prices. Moderate wage behaviour was a contributing factor as well. For the euro area, the Harmonized Index of Consumer Prices (HICP) was at or below 1 per cent in the first two quarters of 1999, a period when industrial producer prices fell. All this occurred despite the potential inflationary impulse stemming from the substantial depreciation of the euro against the United States dollar. However, the situation shifted with the rebound in oil prices and the increase in non-oil commodity prices, which, in combination with the growing weakness of the euro (see box III.1) and the strengthening of economic activity, have raised inflation concerns. Producer prices stopped

Box III.1.

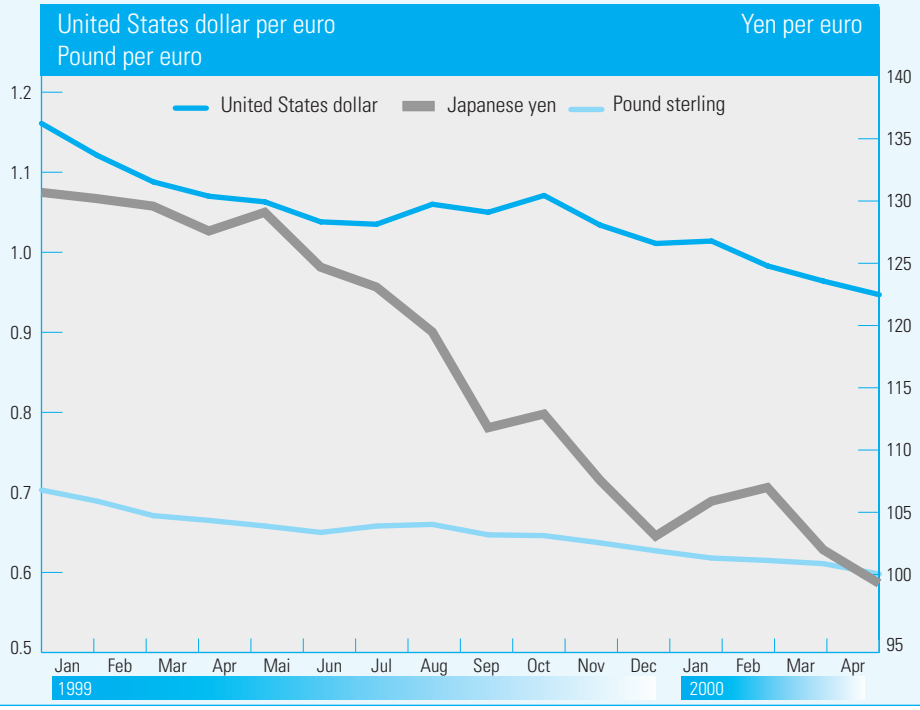
THE EURO: DEVELOPMENTS IN 1999 AND EARLY 2000

The new European currency, the euro, began life on 1 January 1999, with 11 participating members in the monetary union: Austria, Belgium, France, Germany, Finland, Ireland, Italy, Luxembourg, the Netherlands, Spain and Portugal. Two countries, Denmark and Greece, entered into the new exchange-rate mechanism of the European Monetary System, ERM II, whereby they pegged their respective currencies to the euro; Greece has since revalued its currency in preparation for entry into the European Economic and Monetary Union (EMU). The other members of the European Union (EU), Sweden and the United Kingdom of Great Britain and Northern Ireland, continued to allow their currencies to float.

The euro opened strongly against the United States dollar at 1.17, but towards the end of January it began to slip and, over the year, it depreciated substantially, dipping below the psychologically important level of parity with the United States dollar at the end of January 2000. It then continued to weaken (see figure) and in May dropped below $0.90 to the euro.

This depreciation is mostly a reflection of the strength of the United States economy, in contrast to the slower growth in the euro area, particularly in Germany and Italy. Optimism about the prospects of the United States new economy has led to a surge in direct investment by European firms in United States companies as the former try to diversify their activities and secure increased profits and faster growth. A related factor is that the advanced cyclical position of the United States economy has led to substantial yield differentials vis-à-vis

SELECTED BILATERAL EURO EXCHANGE RATES, JANUARY 1999-APRIL 2000
(Period averages)



Source: European Central Bank, *Monthly Bulletin*, May 2000.

Box III.1 (continued)

the euro area. Since mid-1999, the Federal Reserve (Fed) has been aggressively tightening rates, with the ECB tending to lag behind (see figure). Since the disparity in growth is forecast to reverse in favour of the euro area, its currency is expected to appreciate moderately in the medium term.

The euro, however, has also been losing grounds vis-à-vis other major currencies, such as the Japanese yen and, surprisingly, the pound sterling. In the case of sterling, the resilience of the United Kingdom economy following the Asian crisis, in contrast to the slow recovery of the euro area, may have led market participants to believe that the favourable yield differentials vis-à-vis the euro area would persist well into the future. However, in the forecasts presented here, the euro is expected to appreciate against the sterling, albeit at a slower rate than previously anticipated, as United Kingdom growth slows and growth in the euro area picks up. The depreciation of the pound vis-à-vis the United States dollar in May 2000 may signal the beginning of that process.

The fact that the ECB and the new institutional arrangements for policy-making in the euro area have yet to gain full credibility may also have weighed against the euro. There have been questions as to what role the currency plays in policy considerations and how unified the ECB is in its views toward this role. Other more general issues of credibility may also be involved, such as the commitment of member States to structural reform.

Despite the depreciation of the euro, there were also signs of confidence in the new currency, most notably in the increasing acceptance of the euro as currency of denomination for international issuance of bonds and notes. Net new issuances of international securities denominated in euros reached the equivalent of $552 billion in 1999, compared with $470 billion denominated in United States dollars. Overall, about 50 per cent of the net issuance in international debt markets were euro-denominated in 1999, compared with about 33 per cent in 1998 for all the currencies replaced by the euro. Although a large share of net issues denominated in euro is attributed to Europeans, residents outside the euro area also increased their net issuance in euros in 1999, but by a smaller amount.[a]

[a] Bank for International Settlements (BIS), *BIS Quarterly Review,* February 2000.

falling in July of 1999 and have increased in the last few months, reflecting their sensitivity to the oil price rise, while in February 2000 the HICP rose 2 per cent, the stated maximum bound for inflation of the European Central Bank (ECB). However, core inflation, excluding energy, is estimated to be closer to 1 per cent. As the effects of the oil price shock feed through the system, HICP inflation is expected to gradually decline to about 1.5 per cent.

A number of structural factors also point to downward pressures on prices in the medium term; these include the intensifying competition from restructuring and deregulation, which has been given added impetus by the start of the European Economic and Monetary Union (EMU). For example, in Germany, the deregulation of the electricity sector resulted in a substantial drop in energy prices. Worries over the current round of wage negotiations have receded since the IG-Metall Workers in Germany accepted moderate wage claims. For its part, the new currency zone has unleashed forces stemming from increased

price transparency that should continue to put downward pressure on prices. In addition, the expected recovery in the euro towards the end of 2000 and into 2001 will put downward pressure on import prices.

Employment growth in Western Europe was steady throughout 1999[2] and unemployment declined. In 1999, the annual average unemployment rate for the European Union (EU) dipped below 10 per cent for the first time since 1993. However, average annual rates of unemployment ranged from almost 16 per cent in Spain to about 2.5 per cent in Luxembourg (see table A.7). As economic activity continues to expand, unemployment should continue to drift downward. However, since the problem is mostly structural, labour-market reforms are still high in the agenda. The current environment of higher growth provides an opportunity to facilitate appropriate structural reforms.

On 1 January 1999, euro-area countries launched a new currency (see box III.1), their new European Central Bank (ECB), which together with the 11 national central banks forms the European System of Central Banks (ESCB), and a new policy regime. The Maastricht Treaty on European Union set out price stability as the primary goal of monetary policy, and the ECB made this operational in a series of steps. The announced policy contained two pillars: a money target and an inflation target. This led to some confusion and debate as to whether the monetary policy of the ECB was one of inflation-targeting (see box I.1) or a hybrid policy. Currently in Western Europe, Sweden, Switzerland and the United Kingdom use inflation-targeting as the basis of their monetary policy. Denmark and Greece target their exchange rates against the euro. In the case of Denmark, with monetary policy devoted to the role of targeting the exchange rate, fiscal policy has been actively used to stabilize inflation. Norway has had policy similar to that of Denmark, but, with the gyrations in the world oil market, it has been very difficult to maintain stability against the euro, and so it has moved in the direction of inflation-targeting.

The year 1999 was a challenging one for the ECB, inasmuch as it had to deal first with an economic slowdown and then with a recovery in member countries at a time when its governing council was new and there were a multitude of data problems. The interest rate for the euro area had been established at 3 per cent when the currency was launched in January 1999. The ECB's first action was to lower rates to 2.5 per cent in March 1999 but then, as growth began to recover, it raised them back to 3 per cent in November. Since then rates have been raised three times, each time by 25 basis points, with the repurchase rate (its main policy instrument) thus having been brought to 3.75 per cent by May 2000 (see figure III.2). This tightening can be viewed, for the most part, as an effort to bring short-term rates to a more neutral level after the deflationary danger of the early part of 1999 had passed and euro-area growth had firmed.

A new challenge has emerged as inflation measured by the reference price index reached the upper bound of the ECB's declared price target of 2.0 per cent in January 2000. Thus, the question of further tightening emerges. However, there are a number of issues that argue for a measured response. First, as mentioned above, the spike in inflation is predominantly due to the rise in oil prices, and represents the classic case of a supply shock. In such a case, an aggressive policy tightening could have large negative output and employment consequences. Instead, policy can be more gradualist by accommodating the first-round effects of the shock but trying to minimize the sec-

[2] Initial estimates by the European Commission suggest that employment grew by 1.4 per cent in the euro area in 1999 (European Commission, *Spring 2000: Economic Forecasts 1999-2001* (April 2000)).

ond-round effects, namely, the feed-through into prices and wages. Other factors also argue for a more gradualist approach. Despite the strengthening of economic activity, the prevailing strong competitive pressures, together with the assumption of a slowly appreciating euro, should help to contain price pressures.

In the United Kingdom, the Monetary Policy Committee (MPC) also faces a difficult situation. Inflation remains under control, being well below the Bank of England's mandated target of 2.5 per cent. However, output growth in 1999, while slowing marginally in the fourth quarter, is estimated to have been above trend with attendant expected inflation problems in the medium term. In addition, the British currency has appreciated vis-à-vis the currencies of the United Kingdom's major trade partners.[3] While the strong currency has been a powerful check on inflation, the situation could turn around if the currency starts to depreciate in the medium term, as expected by most observers. However, raising interest rates may give rise to further appreciation of the currency. It also risks further damaging the manufacturing sector, which has been very adversely affected by the combination of tight monetary conditions and a strong currency. These risks have been key concerns for the Bank of England. Citing the above-trend growth in the second half of 1999, but also the expectation of sustained depreciation of the currency over the medium term, the Bank of England raised its short-term interest rate, by 100 basis points starting in September 1999, and most recently to a level of 6.0 per cent in February 2000 (see figure III.2).

Fiscal policy was on the whole mildly expansionary in 1999, as Governments worried about the slowdown in growth and some of the pressure for achieving the Maastricht targets had lessened. However the recovery in growth in the second half of the year actually improved government balances as tax revenues increased and payments declined. Low interest rates also led to lower interest payments on debt. This improvement, however, was not reflected in structural deficits, so there is pressure for further consolidation. According to the most recent stability programmes submitted to the European Commission, all member States are committed to achieving specific budget targets over the next few years. In France and Germany, among others, tax reductions are envisaged. The negative impact this measure might produce on the public balance would be offset by cuts and/or tight control of expenditures and stronger economic growth.

The present outlook is subject to several risks. On the upside, growth could be higher than anticipated, given the favourable monetary environment and the potential for strong export growth. Stronger employment growth, which would raise incomes and fuel consumption expenditure, is also possible. However, this stronger growth could exacerbate price risks, especially if higher wage increases were to materialize. A major unknown is how the formation of the monetary union will affect the dynamics of the wage-bargaining process in key countries. From the external side, there are significant risks from the future movement of the euro. On the one hand, any further euro weakness would put additional upward pressure on inflation and elicit some response by the ECB. On the other hand, if the United States economy was to slow significantly, particularly if the United States stock market was to experience a significant correction, the euro could appreciate dramatically, and this would represent a sig-

3 As indicated by the effective exchange rate index estimated by the Bank of England, as of early 2000, the sterling was close to its highest level since 1985 (Bank of England, *Inflation Report,* May 2000, p. 42).

nificant negative shock to economic activity in Western Europe. Finally, the possibility of policy mistakes should not be overlooked, especially given the new institutional environment.

ECONOMIES IN TRANSITION

Positive economic growth returned to the economies in transition as a group in 1999 thanks to the unexpectedly quick recovery in the Commonwealth of Independent States (CIS) countries after the major crisis triggered by the collapse of the Russian rouble in August 1998. The devaluation of the rouble led to severe import compression by the Russian Federation and this had strong negative effects on other economies in the region. However, it also prompted import substitution which was a source of recovery in industrial output and thereby brought some much-needed dynamism to the Russian economy. The recovery of commodity prices, especially that of oil, and the strengthening of international trade were also important factors for the better-than-expected economic performance of the CIS countries. Elsewhere, growth decelerated in Central and Eastern Europe owing to a combination of adverse external and domestic shocks. The Baltic economies, deeply affected by the Russian crisis, sustained a decline in their GDP as they passed through a severe recession.

Economic growth is expected to accelerate in the economies in transition in 2000, reflecting improved economic performances in Central and Eastern Europe as well as by the Baltic countries (see table A.3). Consequently, 2000 will be the first year since transformation started that all economies in transition monitored by the Secretariat will have registered positive GDP growth. Downside risks, however, remain. Despite progress, some countries of the region still have to address macroeconomic imbalances and/or carry the burden of large external debt. Additionally, the fact that implementation of the vast reform agenda in many countries may be delayed because of the immediate social costs would have adverse consequences for economic growth in the future.

Central and Eastern Europe: a mixed recovery

The economies in transition of Central and Eastern Europe continued to perform very unevenly in 1999. Economic performance was particularly poor at the beginning of 1999, when a significant slowdown occurred in almost all countries of the region. Output and exports grew very slowly in Central Europe and declined in most economies of South-eastern Europe during the first half of the year. Industrial output in particular contracted almost everywhere in the region, with the notable exception of Hungary. Thanks to recovery in the second half of 1999, GDP growth for the region as a whole reached 1.4 per cent in 1999, marking the fourth consecutive year of declining average growth. The year 2000, however, is expected to reverse this trend as international economic conditions improve. GDP growth is forecast at 4 per cent in 2000, but it will remain unevenly distributed across countries.

Both external and domestic factors contributed to the deceleration of growth in 1999. Among the external factors, the weakened global demand in the aftermath of the Asian and Russian crises in 1997-1998 and the conflict in Kosovo

adversely affected the region. Since EU accounts for more than 60 per cent of region's external trade and the region has limited options for trade reorientation, slow growth in EU in the first half of 1999 in particular led to lower exports by most countries. Similarly, the contraction of the Russian and Ukrainian markets affected Bulgaria and Poland in particular. Additionally, the conflict in Kosovo imposed a heavy toll on the economic growth of the region, especially on countries of South-eastern Europe. It disrupted trade, lowered tourism revenues, delayed foreign direct and portfolio investment and structural reforms, and contributed to raising the cost of external borrowing.

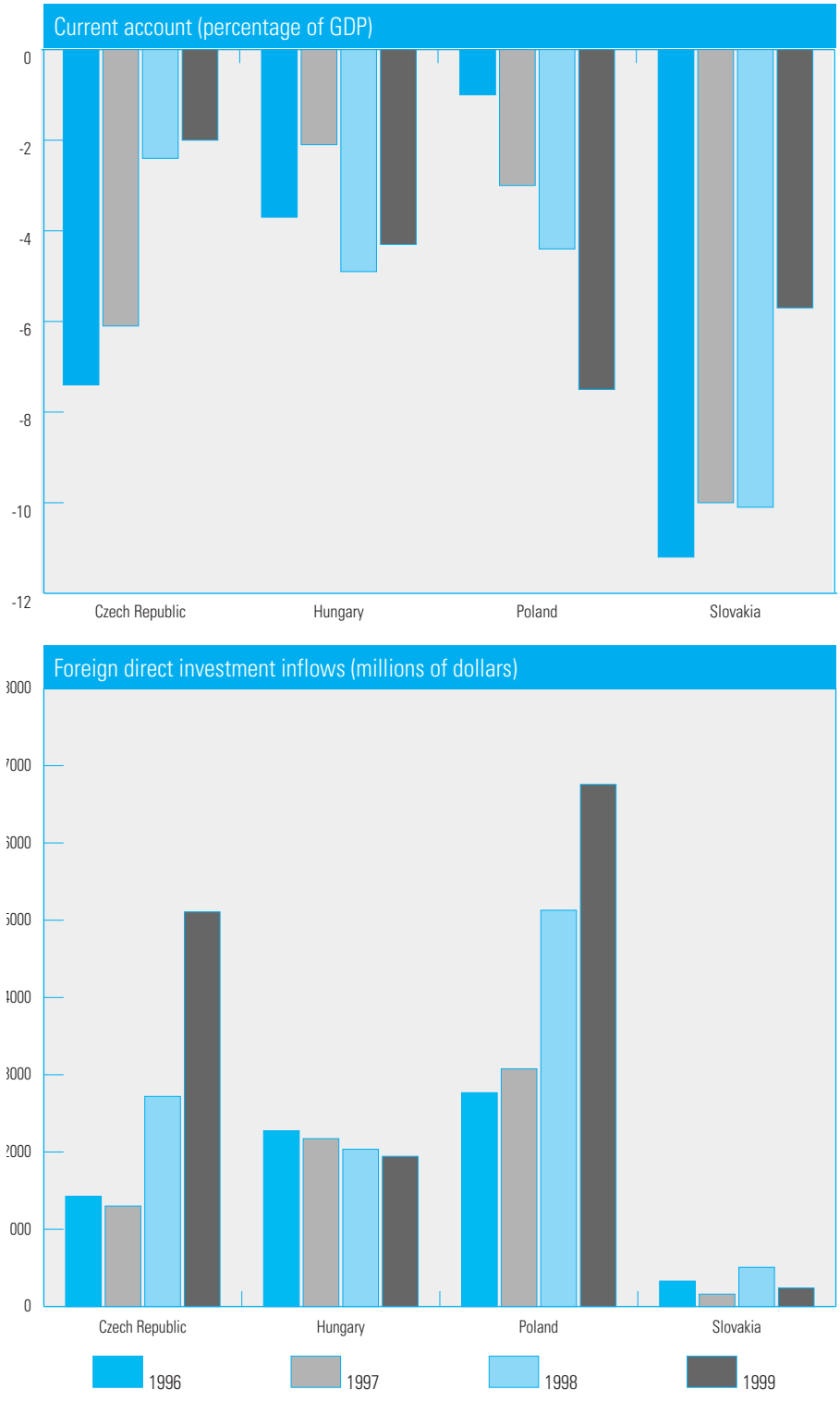
Weaker domestic demand, in many instances due to restrictive policies, also played a role in the economic slowdown. Tight fiscal and monetary policies were embraced because domestic absorption in 1997-1998, in some instances driven by consumption, outpaced domestic production, leading to sizeable current-account imbalances (see figure III.4). External financial constraints during 1999, however, led most economies to reduce their current-account deficits during the year. Nevertheless, foreign direct investment (FDI) as a source of financing the current-account gap became more important in 1999, reinforcing in turn the need to accelerate reforms in these countries so as to attract such flows. Fiscal deficits deteriorated owing to lower-than-expected revenues, and government spending had to be cut. Faced with an acute twin-deficit problem, Romania and Slovakia enacted austerity measures to lower expenditures and increase revenues. Despite restrictive measures, domestic consumption in both Hungary and Poland remained buoyant in 1999 and GDP growth in both countries was slightly over 4 per cent.

Structural problems at the microeconomic level in some countries (especially in the Czech Republic, Romania and Slovakia) contributed to the region's poor economic outcome and will continue to constrain recovery. Lack of domestic savings, debt-payment arrears in the enterprise sector, increased fragility of domestic banks due to deterioration of assets, and low business confidence constrained investment activity in 1999.

Gross fixed domestic investment contracted in Croatia, the Czech Republic, Romania and Slovakia, while it grew modestly in Hungary and Poland. Investment expanded strongly only in Bulgaria, albeit from a low base, and in the former Yugoslav Republic of Macedonia. Investment is expected to grow slowly in 2000. A decline in FDI in the first half of 1999 accompanied low domestic investment in Central and Eastern Europe. By the end of the year, FDI inflows had recovered in the Czech Republic and Poland, but they remained low in Hungary and in Slovakia (see figure III.4). FDI flows to the region are closely related to privatization as well as the prospect of accession to EU and have been playing an important role in financing the current-account deficits mentioned above.

Inflation fell in most countries of the region during 1999 (see table A.9). However, in contrast to 1998, when low international commodity prices moderated domestic inflation, disinflation in 1999 resulted mostly from weak domestic and export demand. In Bosnia and Herzegovina and Bulgaria, the currency board regime contributed to low inflation as well. Even Albania, in spite of the inflow of refugees from Kosovo, experienced deflation owing to the appreciation of the exchange rate brought about by the high volume of humanitarian assistance and remittances from abroad, as well as spending by forces

Figure III.4.
SELECTED ECONOMIES IN TRANSITION: CURRENT-ACCOUNT AND FOREIGN DIRECT INVESTMENT INFLOWS, 1996-1999



Source: Economic Commission for Europe (ECE).

of the North Atlantic Treaty Organization (NATO). On the other hand, inflation remained high in Romania owing to the combination of lax income policies, declining output, and the monopolistic pricing by public services. Inflation accelerated in Yugoslavia after the relaxation of price controls on subsidized products. With the rise in commodity prices, especially fuels, inflation began to pick up towards the end of 1999, thus preventing further reductions of interest rates (see below). Hungary had to revise its 1999 inflation forecast upward during the year, while Poland switched to monetary tightening as a pre-emptive measure to curb inflationary pressures.

Despite lower inflation, monetary policies were cautious during 1999. Although interest rates were cut and monetary policy was gradually relaxed in the first half of the year in the Czech Republic, Hungary and Poland, real interest rates remained high during most of 1999 and declined at the end of the year owing to the rise of prices. This was due to the need to keep attracting foreign finance, the structural problems in the banking sector, and the fiscal imbalances.

Countries remain committed to a low-inflation environment, as reflected in the inflation targets established for 2000, which are below those observed in 1999. However, the inflation outlook may not be favourable as international oil and other commodity prices continue to rise and price deregulation advances as planned. Many administratively controlled prices will become subject to market forces in the Czech Republic and Slovakia in 2000. Further increases are expected in State-controlled utility prices in Bulgaria and in service prices in Romania. Monetary policies in 2000 will therefore remain tight throughout the region. Possible exceptions are the Czech Republic; Hungary, where some loosening may occur owing to the large inflow of speculative capital; and Slovakia, where some liquidity is likely to be injected into the banking sector as unsterilized currency interventions to prevent appreciation of the koruna continue in 2000.

Economic deceleration combined with continuing restructuring efforts adversely affected labour markets in 1999. The rate of unemployment increased in several countries, ranging from 9.4 per cent in the Czech Republic to 46 per cent in the former Yugoslav Republic of Macedonia (see table A.7). Unemployment increased markedly in Poland and Slovakia where it was above 18 per cent, and in Bulgaria where the unemployment rate was about 17 per cent in early March 2000. In these countries, higher unemployment resulted from the economic slowdown and restructuring of loss-making enterprises. Labour markets in South-eastern Europe, particularly in the Federal Republic of Yugoslavia, were adversely affected by the Kosovo conflict. The outlook for labour markets in 2000 is unfavourable despite the expected acceleration in growth. Higher unemployment will exert pressure on social security spending, which may jeopardize budgetary reforms.

Conditions of external financing improved to some extent for the region in 1999, as the terms of borrowing in international capital markets eased. However, the cost of borrowing remains high for countries such as Bulgaria, Romania, Slovakia, and most of the successor States of the former Yugoslavia. The cost of borrowing abroad, however, may fall in 2000 if investors change the composition of their portfolios in favour of the region. Nonetheless, the reduction of spreads may be only marginal, leaving all but the economies most

advanced in their transformation dependent on borrowing from the multilateral institutions.

Efforts at reform implementation need to be intensified in the region in order to remove some of the constraints on growth these countries currently face. For example, owing to the importance of exports as a source of growth, the economies of the region that are more advanced in their transformation (the Czech Republic, Hungary, Poland, Slovakia and Slovenia) need increasingly to concentrate their policies on export promotion, on investment in knowledge-based economic activities, and on bolstering FDI inflows. In the case of Poland, with a relatively large population, a well-functioning domestic market can provide its economy with a certain degree of independence from the cyclical movements in Western Europe.[4] Accordingly, the business environment of the country is to be improved in 2000-2001 through the privatization of the remaining large State-owned enterprises (in telecommunications, the energy sector and oil refining), the restructuring of the coal and steel industries, and the continued reform of the welfare sector. Bulgaria and Romania have to implement a number of economic measures as well. Bulgaria has to accelerate infrastructure investment in 2000 and proceed with the privatization programme agreed with the World Bank. The completion of the agrarian restitution process and the emergence of a land market, combined with the improved agricultural infrastructure, will contribute to increase productivity in agriculture. In Romania, reform of the banking sector and loss-making industries is crucial for economic upturn. Privatization of firms in a wide range of sectors is expected in 2000. However, the social costs of reforms are large and may provoke civil unrest.

Despite the improvement of consumption demand in the second half of 1999, recovery in 2000 will be export-led. The region is expected to benefit from the upturn in Western Europe, as already experienced by the Czech Republic and Hungary in the last quarter of 1999. Increased exports and the Government's revitalization programme should strengthen recovery in the Czech Republic. Hungary is expected to perform well in 2000, despite the vulnerability of its public finances and external accounts. GDP growth is expected to accelerate in Poland in 2000. However, large external imbalance—as the current-account deficit increased to 7.5 per cent of GDP in 1999 from 4.4 per cent of GDP in 1998—still remains a serious threat to the economy (see figure III.4). Therefore, Poland needs to continue to attract strong inflows of foreign finance in 2000 to cover its large current-account deficit.

Prospects are less favourable for the other economies of the region. Bulgaria and Romania, with a wide range of problems in many economic sectors and at the enterprise level, are expected to experience modest growth in 2000. With the improvement of the international economic environment, exports will lead expansion in Bulgaria as growth of domestic demand is constrained by the currency board regime. In Romania, increased exports will likely offset the output loss brought about by enterprise restructuring. On the other hand, Yugoslavia is not expected to benefit from the upturn in international trade, particularly in EU, as the latter revoked trade preferences in 1998. Additionally, other sanctions limit the country's access to international finance, while its productive capacity has not been restored, thus constraining growth.

[4] Polish exports to the Russian Federation and Ukraine have not yet recovered and export performance in general remained weak in the first months of 2000.

The near-term growth outlook for the South-eastern economies also depends on the reopening of traditional transport routes to Western Europe that have been partially blocked owing to the military confrontation over Kosovo. Delays in reconstruction efforts will constrain exports and may discourage FDI flows into the region, impeding the implementation of policies to establish and strengthen market institutions. The importance of Western Europe's role in assisting these countries in overcoming the economic consequences of the Kosovo conflict cannot be overemphasized.

Despite support by the international community, the pace of reconstruction has been slower than anticipated. The Stability Pact for South Eastern Europe, signed in June 1999, created great expectations but disbursement of financial assistance has been slow. International donors pledged about $2 billion at the conference in March 2000 for the affected countries and regions.[5] It is still unclear, however, how much of this will be forthcoming and how quickly.

[5] Much of the money pledged in March 2000 reflects previous commitments.

The possibility of accession to EU will significantly affect economic prospects of the entire region over the medium-to-long term. The European Council met on 10 and 11 December 1999 in Helsinki and proposed several changes in EU's strategy towards enlargement. One outcome was the abolition of the distinction between slow- and fast-track negotiations, so that now all 10 candidates from the eastern part of Europe will be actively negotiating for accession, but each at its own pace. Consequently, there may not be any major negotiations with Bulgaria and Romania for a number of years. Even for those most advanced in their negotiations, many sensitive issues remain to be resolved. In all cases, compliance with EU requirements has opportunity costs, as resources have to be diverted from other uses.

The outlook for the region in 2000 involves several uncertainties. One involves the extent of further structural reforms. While essential for accelerated longer-term growth, such reforms have only limited short-run benefits and often result in substantial short-term social costs. This makes the implementation of such reforms subject to broader political considerations. On the external front, the most important factor is the strength of EU's recovery and how it translates into increased import demand from the region.

Commonwealth of Independent States: emerging from recession at long last?

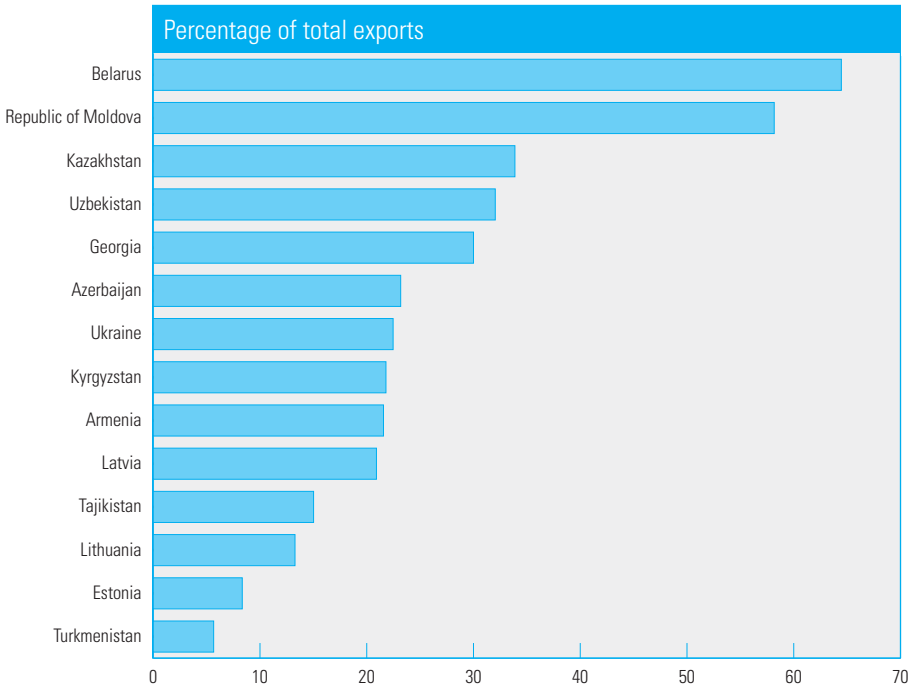
The year 1999 brought some surprises for the CIS countries. At the start of the year it was predicted that, in view of the deepening economic crisis in the Russian Federation and weakened commodity prices, growth in the CIS economies as a group would contract by over 3 per cent, following a 3.4 per cent fall in the region's output in 1998. Instead, the CIS economies grew by almost 3 per cent in 1999. Growth is expected to further accelerate in the region in 2000 (see table A.3).

In the first quarter of 1999, there was a sharp economic contraction in the Russian Federation as well as in Kazakhstan and Ukraine, the next largest economies of the region. The Russian Federation, in particular, has been an important market for several of the economies in the region (see figure III.5). Recession in the three large countries imposed a negative shock on the other economies of the group as intraregional trade collapsed. Countries such as

Belarus and the Republic of Moldova were particularly hard hit. However, the recovery in oil prices since mid-1999 has triggered a positive chain reaction by increasing export earnings and reducing pressures on fiscal and external balances. The large devaluation of the rouble gave a boost to import substitution in the Russian Federation. As Russian industrial output stopped declining and then recovered to positive growth, a more positive economic environment was created in the region in the second half of 1999. However, the prospect of a tangible region-wide improvement in economic performance looked elusive until the end of 1999. There was a sharp turnaround in industrial production in Kazakhstan and Ukraine late in 1999 which, as in the case of the Russian Federation, was largely brought about by import substitution due to the sizeable depreciation of their currencies. The recovery of commodity prices and export volumes aided the upturn in the other countries.

Paradoxically, the persistent imbalances in the fiscal and external sectors, which had been the main threat to macroeconomic stability in the region in recent years, have eased as a result of the dramatic adjustments imposed on the CIS countries since the latter part of 1998. The sharp worsening of fiscal balances at the start of 1999, because of the heavy reliance of public revenues on exports, was forcefully tackled in most countries by additional austerity measures and renewed efforts to improve revenue collection. Recovery of export earnings towards the end of 1999 gave a further impetus to reaching more sustainable fiscal positions. As a result, the much-feared monetization of fiscal deficits did not occur. Structural fiscal balances have improved in most countries. Especially impressive was the fiscal turnaround in the Russian

Figure III.5.
SELECTED ECONOMIES IN TRANSITION: DESTINATION OF EXPORTS TO THE RUSSIAN FEDERATION, 1997



Source: IMF, *Direction of Trade Statistics.*

Federation, where the federal budget deficit was reduced to 1.7 per cent of GDP in 1999 from 5 per cent in 1998, mostly owing to improvements in revenue collection.

After the currency devaluations in several countries, inflation surged. It was subsequently contained by tight monetary policy, except in Belarus, where annual inflation reached almost 300 per cent in 1999 (see table A.9). The gradual stabilization of exchange rates (except in Belarus, Tajikistan and Uzbekistan) also contributed to controlling inflation in the region. Although the annual average inflation rate rose substantially in a number of countries in 1999, region-wide inflationary pressures have receded and most countries have resumed their pre-crisis trend of lowering inflation.

Owing to the large compression of imports in all countries, external balances improved in 1999. Especially the unsustainably large current-account deficits in some of the smaller countries have been substantially reduced. For instance, the Republic of Moldova's current-account deficit, which had been as high as 20 per cent of GDP, contracted to less than 4 per cent of GDP in 1999, while the large deficits of Kyrgyzstan, Tajikistan and Turkmenistan were substantially reduced.

The prospects for the region look encouraging, with positive growth for the second year in a row. The favourable changes in the external environment, both inside the region and elsewhere, are likely to continue in the medium term. The three major economies of the region are expected to sustain their recovery; coupled with further firming of commodity prices and increased buoyancy in international trade, this will support growth in the rest of the region. Average inflation is expected to be about 27 per cent, less than half the 1999 level, while the current-account deficit will increase slightly owing to the recovery of imports. In contrast to 1998 and 1999, economic growth in 2000 will also benefit from the reduced policy uncertainty resulting from the parliamentary and presidential elections held in key countries in 1999 and early 2000. Nonetheless, the presence of obsolete industry in the major CIS economies will constrain growth over the medium term.

The Russian economy has performed well since mid-1999. Industrial production has consistently grown at double-digit annual rates over the nine months into April 2000. More importantly, investment and consumption also seem to be expanding. For the first time since transition began, investment is reported to be edging up, and is expected to rise somewhat in 2000. Real disposable income grew by 4.4 per cent in the first two months of 2000, following a 15 per cent fall in 1999. Additionally, there are increasing signs of improved confidence in the economy. For instance, the stock market index has recovered and ratings for the Russian Federation's foreign-currency bonds and bank deposits have been upgraded. More significantly, FDI reached $4.2 billion in 1999 compared with $3.3 billion in 1998, but it is still below the peak of $5.3 billion reached in 1997. The Government is currently predicting 4-5 per cent growth in GDP in 2000, thus providing an ambient regional environment for other CIS countries.

However, there are some risks to the outlook for the Russian Federation. Despite the fiscal and current-account improvements in 1999 and early 2000, a strain on the budget could develop owing to debt-servicing difficulties or increased spending on the conflict in Chechnya. The scheduled external debt

repayments for 2000 are estimated at $10.2 billion, despite the February 2000 restructuring of $32 billion of international bonds including a $10.6 billion write-off, by London Club creditors. However, there remains $42 billion of official debt. Furthermore, if additional shocks (such as an abrupt fall in oil prices) were to hit the economy, the recovery could easily be derailed. There is not enough internal dynamism in the economy, from domestic consumption and investment, to sustain growth under such circumstances. Impoverishment is one cause. Another is the still incipient structural reforms, including a bankrupt banking sector and weak governance mechanisms. Although the prospects for political stability have improved, those for renewed reforms remain uncertain, at least until the new Government's programme is finalized and a credible implementation plan is adopted.

Kazakhstan's economic recovery seems to be more robust. GDP growth is likely to reach 3½ per cent in 2000, and possibly a higher level thereafter, owing not only to the firming of the prices of its major exports and increased Russian demand, but also to its continuing reorientation of trade towards Western markets and its accelerated reform efforts. The record oil exports in 1999 and the anticipation of the oil pipeline connecting the Tengiz and other oil fields to the Black Sea, which is scheduled to come on stream in October 2001, will further bolster investment and growth. FDI is expected to accelerate in 2000 and access to international capital markets, which was restored in 1999, is expected to improve in 2000.

The economic outlook for Ukraine has also improved. Following its slow recovery in the second half of 1999, industrial production increased by 9.7 per cent, leading to a 5.6 per cent rise in GDP in the first quarter of 2000 compared with the same period in 1999. External demand is expected to pick up in 2000, providing additional support to economic activity. Contrary to earlier fears of default, Ukraine was able to restructure its external debt and ease its servicing obligations in 2000. Monetary and fiscal policies are expected to be firm and inflation and currency depreciation will slow down further in 2000. However, the limited progress achieved with structural reforms is likely to constrain growth to about 2 per cent in 2000.

The other CIS economies are expected to improve or maintain their performance in 2000, with the possible exception of Belarus and Uzbekistan. For oil and gas producers, progress in the construction of planned pipelines will help in sustaining the high growth rates recorded in 1999 as output of the hydrocarbon sector and export earnings increase (see box III.2).

The large structural budgetary imbalances and current-account deficits, coupled with rapidly growing foreign debt, in countries such as Armenia, Kyrgyzstan and the Republic of Moldova make these economies particularly vulnerable to adverse shocks. The lack of reforms, especially the slow pace of structural changes in the economy, is troubling. The extension of loose credit to unviable enterprises persists and is leading to further accumulation of quasi-fiscal liabilities in the banking sector in some countries such as Belarus, Turkmenistan and Uzbekistan, thus rendering their medium-term economic prospects less promising.

Box III.2.

HYDROCARBON RESOURCES AND PIPELINES: DREAM OR REALITY?

The hydrocarbon (oil and natural gas) sector forms the bedrock of the economies of Azerbaijan and Turkmenistan and is assuming increasing importance for Kazakhstan[a]. The surge in foreign direct investment (FDI) flows into the sector in recent years has boosted economic performance in these countries and is expected to become the main engine of growth in the region in the long term.

The hydrocarbon reserves of the Caspian Sea area are estimated to amount to up to 200 billion barrels (of which about 30 billion barrels are proven) of oil reserves and 18 trillion cubic metres (m^3) of natural gas, about half of which are proven. Exploitation of the Caspian Sea hydrocarbon reserves, although they constitute only about 3 per cent of total world proven reserves for oil and 6 per cent for gas, can bring substantial economic benefits for the countries concerned. Nonetheless, most of these reserves remain underexplored and undeveloped. The asymmetric importance of the reserves for the countries themselves and for the major international oil companies partly explains why, but there are other factors. Lack of efficient transportation networks connecting the region to international markets is one. The existing pipelines via the Russian Federation proved to be unreliable in the past. Moreover, this reliance on the Russian pipelines to reach export markets makes the producing countries too dependent on a major competitor. The countries have therefore been exploring, with the help of transnational oil companies, a number of plans for building new large-scale export pipelines that would give them alternative export routes to major markets. The process has been complicated by strategic and geopolitical interests, as well as by the increased volatility of hydrocarbon prices in recent years, which affects the profitability of these proposals. However, major breakthroughs were made in 1999 towards the implementation of some of the most important plans.

First, an oil pipeline connecting Baku, Azerbaijan's capital, on the Caspian shore to the Georgian port of Supsa on the Black Sea was opened in April 1999. The new pipeline proved critical in maintaining Azerbaijan's exports when the existing pipeline through Chechnya experienced problems during the war there. Second, in November 1999, Azerbaijan, Georgia and Turkey signed agreements on the construction and operation of a 1,730 kilometre (km) oil pipeline from Baku to the Turkish port of Ceyhan on the Mediterranean Sea. Finally, these three countries and Turkmenistan signed an agreement on the construction of a 2,000 km gas pipeline from Turkmenistan to the same Turkish port, 300 km of which would go under the Caspian Sea.

Of critical importance, especially for Azerbaijan, is the timely construction of the oil pipeline, which is supposed to start in 2001 and be completed in three years. Plans for increasing oil output and therefore exports from a current 96,000 barrels per day (bpd) to 300,000 bpd in 2003 and 800,000 bpd by 2008, can only be implemented if the pipeline project proceeds on schedule. The benefits for Azerbaijan from the pipeline are expected to be substantial. According to some estimates, oil export proceeds will reach $4 billion by 2005, accounting for 85 per cent of total exports and contributing more than half of budgetary revenues.

After the resolution of a series of earlier obstacles, prospects for the construction of the pipeline now look promising; however, adverse developments cannot be ruled out. According to some commentators, the pipeline requires about 1 million bpd to be financially viable. It is not clear whether Azerbaijan's reserves alone will be able to generate such volume. The pipeline, therefore, may need additional commitments by other suppliers, such as Kazakhstan and Turkmenistan, to be economically viable. However, their commitment to the proposed pipeline is not yet guaranteed and there are alternative routes they may use to export their production. For instance, the Russian Federation com-

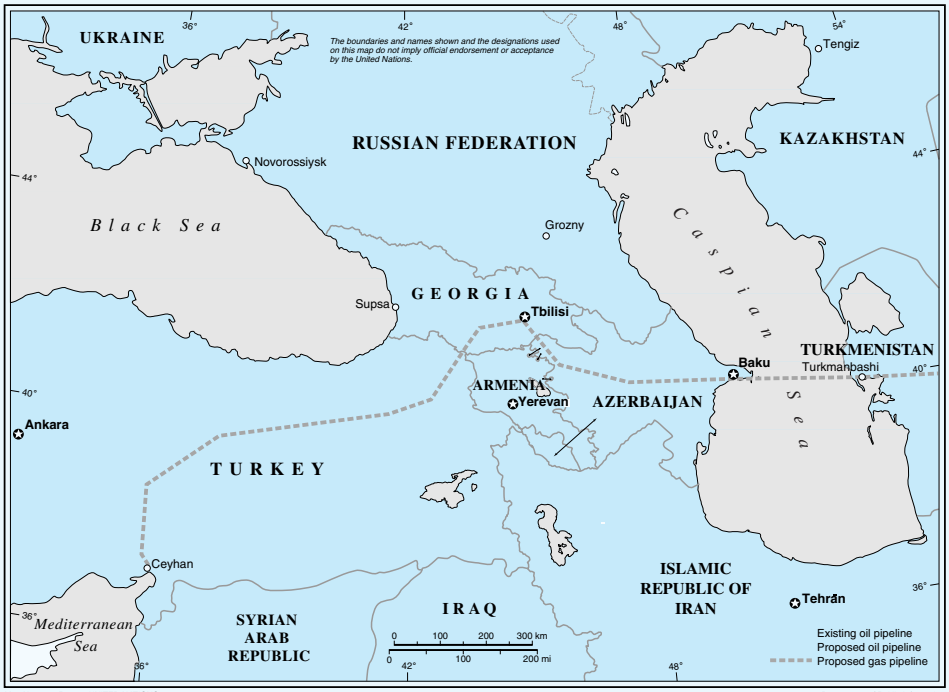
[a] The share of the hydrocarbon sector in GDP is about 25 per cent in Azerbaijan, 13 per cent in Kazakhstan and 40 per cent in Turkmenistan; its share in exports is almost twice as great.

Box III.2 (continued)

pleted a bypass around Chechnya (on the Baku-Novorossiysk line) pipeline in March 2000, thereby improving the reliability of that pipeline. It is also building a link from the Caspian port of Makhachkala in Dagestan to this line, which would enable Kazakh and Turkmen exports to bypass Baku. Lastly, the Russian oil company (Lukoil) announced in March 2000 that it had discovered recoverable large oil reserves in the Russian sector of the Caspian Sea. This discovery could boost the attractiveness of constructing another route from Novorossiysk to the Tengiz oilfield in Kazakhstan at the expense of the Baku-Ceyhan pipeline.

Turning to the gas pipeline, construction is expected to start in 2001 and be completed by mid-2003. The pipeline will allow Turkmenistan to double its export capacity, which has been the main constraint on the expansion of the gas sector in the country. The 31.5 billion m^3 capacity pipeline was primarily designed for carrying Turkmen gas to Turkey, but agreement on large-scale gas shipments and financing has not yet been reached, and the prospect remains uncertain. First, disagreements between Azerbaijan and Turkmenistan over sharing the pipeline capacity delayed its implementation for months as Azerbaijan discovered vast (500 billion m^3) offshore gas deposits fields in early 1999 and became interested in using the pipeline as well. The issue was resolved, with Azerbaijan agreeing to limit its use of the pipeline to 5 billion m^3. Nonetheless, Turkmenistan's enthusiasm for the pipeline seems to have abated, possibly owing to the prospect of heavy transit dependence on a major new competitor, with whom existing ownership disputes over important fields in the Caspian Sea still remain unresolved. Furthermore, during the visit of the Russian president to Turkmenistan in May 2000, the two countries reached an agreement to increase Russian purchase of Turkmen gas by 10 billion m^3 per year, starting with 30 billion m^3 in 2000 and raising the figure to 50-60 billion m^3 in the next five years. If the deal holds, Turkmenistan will not need such a major expansion of pipeline capacity in the near future.

SELECTED CASPIAN BASIN OIL AND GAS PIPELINES



Baltic countries: recovering from the Russian crisis

The impact of the Russian crisis proved to be more severe than expected, bringing overheating and fast growth in the Baltic countries to a halt. All three economies slid into sharp recession in early 1999 owing to the sudden fall in exports of sectors that rely heavily on the Russian market. Both exports and imports fell by about 12 per cent in 1999, transit earnings shrank, and the shipping sector was adversely affected. Some supply-side factors also contributed. However, the recession bottomed out by mid-year and the region started recovering in the second half of 1999. The adverse trade shocks and disturbances to domestic banking systems and stock markets have been successfully overcome, owing in part to a resumption of export growth. Nevertheless, for the year as a whole, regional GDP contracted by 2.0 percent.

The strength of the recovery in individual countries has been a function of the depth and breadth of earlier reforms, as well as of measures adopted in relation to the crisis. Among the three economies, Estonia is the least dependent on the Russian market (see figure III.5) and emerged first and fastest from the recession. Estonian exports benefited from the recovery in Western Europe and pulled the country out of recession. Latvia's recovery started in the fourth quarter of 1999, the delay partly reflecting the lack of resilience of its economy, as structural reforms, particularly privatization of large enterprises, have not yet been implemented. Moreover, the Latvian banking sector was hard hit by the Russian crisis owing to its high exposure to the Russian economy. Lithuania, with its large agricultural sector and heavy reliance on food exports to the Russian Federation, was the last to start a recovery. Moreover, disruptions of oil delivery from the Russian Federation to the Mazeikiai refinery, which accounts for 10 per cent of GDP in Lithuania, resulted in a 30 per cent drop in the refinery's output, adversely affecting overall GDP growth in the country.

Economic growth is expected to reach 3¾ per cent in the region in 2000. Inflation will be uniformly low, in part because of the Baltic countries' fixed exchange-rate regimes. Current-account deficits are expected to be further reduced, especially for Latvia and Lithuania, where they were about 10 per cent of GDP in 1999.

The crisis forced the Baltic countries to address their macroeconomic imbalances. The recession led to import curbs, which improved external balances in Estonia and Lithuania. These had been the main policy concern prior to the crisis. Adjustment has been dramatic in some cases. In Estonia, for example, the current-account deficit was cut by more than half. The recession led to increased fiscal deficits. In all three countries, 1999 budgets were based on fairly optimistic growth forecasts, despite downside risks emanating from the Russian default of August 1998. By mid-year, all three were facing the need to cut public expenditures. The worsening of fiscal positions briefly threatened, especially in Latvia and Lithuania, the sustainability of the fixed exchange-rate regime. However, Estonia and Latvia in June and Lithuania in October adopted additional austerity measures and embarked on a tight schedule to eliminate the fiscal slippages incurred in early 1999. Inflation, which had been declining over the past few years, was further reduced to low single-digit levels in 1999.

There are some risks to this outlook. Since these countries cannot use the exchange rate to facilitate adjustment, fiscal discipline and deepening institutional and structural reforms are a prerequisite of continued success. Tough fiscal policy remains a major policy challenge in 2000, especially for Lithuania whose fiscal deficit is estimated to be the largest in the region. However, the

curtailing of public expenditures envisaged in the 2000 budgets may have some restraining effect on recovery not only in Lithuania but also in Latvia. Additionally, these two countries need to accelerate structural reforms. An additional medium-term concern for the Baltic countries is the poor prospects for sustaining revenues from the trans-shipment of Russian oil exports. The recent decision by the Russian Federation to build a new pipeline to the Gulf of Finland in order to reduce reliance on the existing export routes through the Baltic States, could have a large negative impact on these economies, especially on Latvia.[6]

[6] About 12-15 million tons of Russian oil (about 15 per cent of total oil exports to non-CIS States) are shipped through Latvia, generating sizeable transit fees for the country.

DEVELOPING COUNTRIES

The economic growth of developing countries accelerated in 1999. A more benign international economic environment, including the recovery of external demand and of some commodity prices, particularly fuels, was one of the factors underlying faster growth in this group of countries in 1999. While external credit conditions remained tight for most countries, the cost of external borrowing—albeit still high—declined towards the end of 1999, reflecting improved market sentiment towards some of these economies. For the heavily indebted poor countries, which have little access to international capital markets, an enhanced external debt strategy was adopted, but implementation has been slower than expected.

Growth for developing countries as a whole remained well below the rates observed earlier in the decade (see table A.4) and economic performances differed sharply across the several developing regions, with the number of countries with a decline in per capita GDP remaining at 37. Successful expansionary fiscal and monetary policies contributed to a stronger and broader recovery than expected in East Asia as countries hit by the financial and currency crises rebounded again, placing the region among the fastest growing in the world. South Asia and China also had strong economic performances, thereby providing an increase in average per capita income in countries accounting for over half the population of the developing world. In contrast, Africa maintained only a modest rate of growth, while growth decelerated in West Asia owing to lower oil output, austere macroeconomic policies, and adverse natural phenomena. Finally, GDP growth stagnated in Latin America in 1999 owing to a deterioration in the terms of trade for many economies of the region and the adverse impact of the Brazilian currency crisis.

The year 2000 should witness a more balanced performance as developing countries solidify their recoveries and domestic demand conditions improve in countries that suffered recession in 1999. Differences in growth are expected to be further reduced in 2001, with the pace of growth over the biennium forecast to approach pre-crisis levels.

Africa: export-led growth

Africa's real GDP growth reached 2.8 per cent in 1999, compared with 2.7 per cent in 1998. Growth in 1999 was largely export-driven, attributable mainly to a significant increase in the export earnings of the region's oil-producing countries as a result of higher oil prices. Additionally, the recovery of demand

in Asia and Europe for Africa's exports of industrial raw materials contributed to growth in other countries of the region, even though prices of many other commodities remained weak or declined further. Disciplined macroeconomic policies in a large number of countries contributed to macroeconomic stability, but domestic demand was generally weak and provided little stimulus to output growth. GDP growth is expected to accelerate to 4¼ per cent in 2000 as domestic conditions improve and exports strengthen the recovery under way (see table A.4).

Unstable political conditions continue to impose a negative impact on growth as populations are displaced by wars and civil unrest and scarce resources are diverted from productive uses. Similarly, the human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) pandemic affecting the continent is already constraining growth and is anticipated to have a major adverse impact on the long-term economic prospects of the region (see box III.3).

GDP growth accelerated in the majority of the 38 African countries regularly monitored by the Department of Economic and Social Affairs of the United Nations Secretariat. Three countries (the Democratic Republic of the Congo, Morocco and Zimbabwe) suffered economic recession in 1999, compared with six countries in the previous year.[7] Overall, for the region, per capita GDP growth increased just marginally in 1999.

The combined GDP of the eight major oil-exporting countries (Algeria, Angola, Cameroon, the Congo, Egypt, Gabon, the Libyan Arab Jamahiriya and Nigeria) increased by over a percentage point to about 4 per cent in 1999, even though the volume of crude petroleum output and exports declined in most cases. Production declines in Algeria, the Libyan Arab Jamahiriya and Nigeria, African countries that are members of the Organization of the Petroleum Exporting Countries (OPEC) were directly related to voluntary cutbacks under the OPEC quota agreement. In Nigeria, oil output also declined owing to frequent power supply disruptions, fuel shortages and civil unrest in oil-producing regions. A more encouraging development, however, was the commencement of production and exports of liquefied natural gas from new facilities in October 1999. This major diversification of the country's energy sector has provided a boost to Nigeria's export earnings.

Oil export revenues had a positive impact on the economy of Cameroon, of the Congo, Gabon and, notably, of Equatorial Guinea and the Sudan which recently joined the ranks of Africa's oil-exporting countries. The Libyan Arab Jamahiriya's economic prospects were additionally improved by the suspension of United Nations economic sanctions in April 1999 and the resumption of trade and investment ties with partners in Europe and other African countries. In Angola, however, increased oil revenues, which were substantial owing to significant increases in output, benefited the economy only marginally because of the intensification of the civil war in 1999 and lack of development of the country's vast agricultural and mineral resources.

Among oil-importing countries, at least 12 countries in sub-Saharan Africa registered growth rates of at least 5 per cent, and Botswana and Mozambique ranked among the fastest-growing developing countries in the world with GDP growth rates of 9 per cent or higher. Most sub-Saharan African countries benefited from an improved policy environment, low or moderate inflation, and

[7] The factors underlying recession were country-specific. The Democratic Republic of the Congo continued to be immersed in civil conflict. Morocco suffered a major drought that devastated its agriculture, while in Zimbabwe fuel shortages, high interest rates, severe fiscal imbalances and an overvalued currency constrained growth.

Box III.3.

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) IN AFRICA: AFFECTING THE PRESENT, ERODING THE FUTURE

No region of the world is exempt from the burden of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), as people infected with the virus or living with the disease can be found almost everywhere. However, the pandemic assumes dramatic proportions in sub-Saharan Africa. At the end of 1999, the region had 23.3 million people living with HIV/AIDS. This corresponds to almost 70 per cent of the world's population infected with the virus, while the region's share of the world population is only 10 per cent. Over two thirds of new cases of HIV/AIDS reported in 1999 occurred in the region. AIDS is already the leading cause of death in the region.[a] Sub-Saharan Africa has already lost a cumulative 13.7 million people to the disease;[b] at least 33.5 million more will die during the period 2000-2015.[c]

HIV prevalence in sub-Saharan Africa as a whole is estimated at 8 per cent of the adult population (ages 15 to 49), signalling a rapid spread of the virus in a region ill equipped to deal with the problem. At the country and local levels, prevalence ratios can be much higher. Kenya, Malawi, Mozambique, Rwanda and South Africa reported an adult prevalence ratio above 10 per cent at the end of 1997, while that ratio surpassed 16 per cent in Botswana, Namibia, Zambia and Zimbabwe. Moreover, prevalence rates between 30 to 50 per cent among pregnant women are not uncommon in some regions of these countries. Once infected, most people will eventually develop AIDS (usually in 5 to 10 years in sub-Saharan Africa) and die after struggling with, and inevitably losing to, the disease.

The demographic impact of the disease and the setbacks it causes in terms of hard-won developmental gains are alarming. Although experts do not expect the population of affected countries to decline as a result of AIDS, they do project it to be lower than it would have been in the absence of the disease. Increased mortality due to AIDS (see figure) has already reduced life expectancy in the region and will continue to reduce it, particularly in the countries with high HIV prevalence. This is particularly evident in Botswana, where life expectancy projected for 2000-2005 is over 20 years shorter than it was in 1985-1990 and 28 years shorter than if AIDS had not affected the country.[d] As AIDS often kills when people are in the prime of their productive life, the labour force in many countries will shrink. In the case of Zimbabwe, the labour force is projected to be 17.5 per cent lower by 2015 than in a non-AIDS scenario.[e]

With the pandemic most directly affecting the labour force and, in its initial stages in sub-Saharan Africa, the most skilled and educated among them, its impact on the economy is already being felt, especially in the education and health sectors. Thus, in Malawi and Zambia, for instance, the fact that about 30 per cent of teachers are infected with HIV poses tremendous challenges for the development of human capital in these countries.[f] Elsewhere, the disease has stricken medical personnel, reducing the supply of trained nurses and doctors. Furthermore, this is taking place at the same time that the demand for health-care services has increased, thus overwhelming existing health-care systems. In Côte d'Ivoire, Zambia and Zimbabwe, more than half of hospital admissions in urban areas are due to AIDS, a situation that tends only to get worse as the disease follows its course and prevalence rates do not decline. It also diverts resources from other illnesses and health problems and poses difficult trade-offs for policy makers.

In the agricultural sector, there has been a reduction in area cultivated and lower yields in some of the hardest-hit areas, as well as changes in crops produced as households adjust to the decline in available labour by switching from the more labour-intensive (usually cash) crops to less labour-intensive (subsistence) crops. As the quality and

[a] G.H. Brundtland, "Towards a strategic agenda for the WHO secretariat", statement of the Director-General to the Executive Board at its 105th session, Geneva, 24 January 2000 (http://www.who.int/director-general/speeches/english/20000124_eb.html).

[b] Joint United Nations Programme on Human Immunodeficiency Virus/Acquired Immuno-deficiency Syndrome (HIV/AIDS)/World Health Organization (UNAIDS/WHO), "AIDS epidemic update: December 1999".

[c] United Nations, "The demographic impact of HIV/AIDS", report on the technical meeting, New York, 10 November 1998 (ESA/P/WP.152, February 1999).

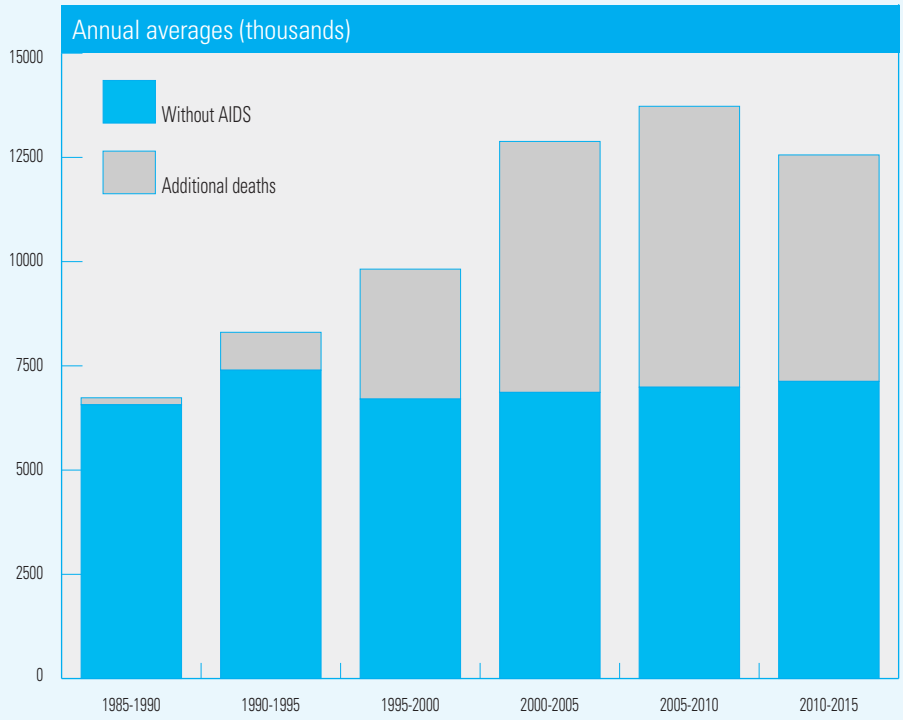
[d] Infant mortality is also negatively affected owing to paediatric HIV infection and larger increases in child mortality are expected among children above age 1. (United Nations, "The demographic impact of HIV/AIDS"…).

[e] International Labour Organization (ILO), *Action against HIV/AIDS in Africa* (Geneva, 2000).

[f] World Bank, *Intensifying Action against HIV/AIDS in Africa: Responding to a Development Crisis,* Washington, D.C. (June 1999).

Box III.3 (continued)

ESTIMATED AND PROJECTED NUMBER OF DEATHS DUE TO AIDS IN NINE AFRICAN COUNTRIES,[a] 1985-1990 TO 2010-2015



Source: DESA/Population Division.

[a] Botswana, Kenya, Malawi, Mozambique, Namibia, Rwanda, South Africa, Zambia and Zimbabwe.

quantity of crops fall, the nutritional and health status of affected populations deteriorates and food security is threatened.[g] Links between smallholder sectors and the commercial agricultural sector may lead to production disruptions of agro-processing businesses. In Kenya, for example, supply disruptions emerged in some sugar cane processing businesses, as a continuous inflow of raw materials could not be maintained. Farmers succumbing to AIDS were unable to attend to their fields.[h]

AIDS has been eroding the competitiveness of the African economy and imposing tremendous output losses. Firms face higher costs (and lower profits) owing to increased payments of medical expenditures, disability and pension benefits, and funeral costs. Working days are lost and output forgone owing to increased absenteeism and the need to care for the sick or to travel to attend funerals. Training, recruitment expenditures and insurance costs are up. Even in countries where the unemployment rate is high, it may not be easy to replace workers lost to HIV/AIDS. Although this argument usually refers to skilled labour, which is more difficult to replace, it may also apply to unskilled labour. If a considerable share of the workforce—even unskilled labour—is inexperienced, production levels cannot be maintained.[i]

There have been attempts at quantifying the macroeconomic impact of AIDS. Apart from perverse statistical effects by which the rate of growth in gross domestic product (GDP) per capita may even increase, at least temporarily, as the reduction in population caused by AIDS is larger than the initial decline in output, some studies do indicate a lower rate of economic growth. This is due to the disease's impact on savings (already low in sub-Saharan Africa), as resources are diverted from investment into caring and nursing the sick, and on the existing pool of skilled labour. The higher the AIDS preva-

[g] See Food and Agricultural Organization of the United Nations (FAO), *The Effects of HIV/AIDS on Farming Systems in East Africa*, particularly chap. 3 entitled "Results: the effects on small farmers" (http://www.fao.org/docrep/v4710/V4710E04.htm).

[h] Gabriel Rugalema,"HIV/AIDS and the commercial agricultural sector in Kenya: impact, vulnerability, susceptibility and coping strategies: summary of findings and recommendations" (http://www.fao.org/sd/exdirect/exre0026.htm).

[i] ILO estimates that about 1 in 5 mining workers in South Africa are infected with HIV (ILO, *Action against AIDS*...). See also "Will AIDS kill Africa's economy?", *African Business*, March 1998 (http://dialspace.dial.pipex.com/icpubs/ab/mar98/absr0301.htm).

Box III.3 (continued)

lence, the stronger the negative effects on per capita income growth. While AIDS has been estimated to cost sub-Saharan African countries on average 0.15 per cent per year of their per capita GDP growth during the period 1990-2025, for countries with high prevalence rates, per capita growth can be lowered by 0.33 per cent per year.[i] This is a considerable loss for countries that barely grew in per capita terms during the past few years. Other studies indicate worse outcomes. For instance, Zambia's GDP would be 9 per cent lower by 2000 (4 per cent lower in per capita terms) when compared with a non-AIDS baseline projection. In the case of Kenya, per capita GDP is projected to be 10 per cent lower by 2005.[k]

The adverse long-term effects of HIV/AIDS on the economy are too complex to be quantified. They will be large, however, and will be felt long after the disease has run its course. The replacement costs of the cohort taken by the disease are formidable. Additionally, human capital development is being seriously compromised in the region as children are pulled out of school to help with domestic chores (and/or to save on school fees), nutritional intakes decline, and assets are depleted to cover medical care and funeral expenses. Skills are not being transmitted to the younger generation. The stock of currently available human capital is quickly being depleted by the disease and cannot be easily replaced. Meanwhile, opportunity costs are high as investment in physical infrastructure and in productive activities is delayed or permanently curtailed, compromising future growth even further and leading to a larger developmental gap between sub-Saharan Africa and the rest of the world. Yet this need not be so. Comprehensive policies need to be put in place and resources mobilized immediately to counteract the spread and impact of HIV/AIDS. Strong political leadership, information campaigns and prevention programmes are key elements. Experience elsewhere, as well as in the region, with Uganda and Senegal being the successful cases so far, has demonstrated that the spread of the disease can be contained.

[i] High prevalence rates, in this case, are defined as 8 per cent and above (M. Over, *The Macroeconomic Impact of AIDS in Sub-Saharan Africa* (Washington, D.C., World Bank, June 1992)).

[k] L. Forgy and A. Mwanza, "The economic impact of AIDS in Zambia", abstract presented in R. Loewenson and A. Whiteside, *Social and Economic Issues of HIV/AIDS in Southern Africa,* SAfAIDS Occasional Papers Series No. 2, March 1997; and G. M. Baltazar and others, "AIDS in Kenya: background, projections, impact and interventions", June 1999 (http:www.arcc.or.ke/nascop/1999.html).

slight improvements in domestic and foreign investment. South Africa's economy—the largest in the region—regained its momentum after a sluggish performance in 1998 and early 1999 caused by the turbulence of the Asian financial crisis. Capital flight, depletion of the country's international reserves, currency depreciation, high domestic interest rates, and escalating inflation in the first half of 1999 were halted and reversed as international investors regained confidence in the economy in response to tight monetary and fiscal policies. FDI and portfolio capital inflows increased. Exports were the main source of growth in 1999, and the country recorded an overall surplus on current account by the end of the second quarter.

Favourable weather and increased agricultural output were the most important factors underlying growth in the majority of countries in 1999. Economic activity related to agriculture in the services and manufacturing sectors also improved somewhat as a result of the increase in agricultural output. Agricultural output, however, declined in Ethiopia, Mauritius, Morocco, Somalia and several other countries because of drought. In both Mauritius and Morocco, as much as 30 per cent of agricultural production was lost to drought. Somalia recorded its seventh consecutive year of poor harvests, which combined with civil conflict led to a major food crisis in the south of the country.

Manufacturing output growth remained sluggish in many countries as a result of low effective demand. Increased competition from lower-cost (and often, higher-quality) imports also contributed to poor performance of the sector. In Nigeria, the capacity utilization remained very low at about 34 per cent

owing to bottlenecks in production schedules caused by frequent power outages and shortages of petroleum products. Similarly, fuel shortages were particularly acute in Zimbabwe, leading to decreased capacity utilization in the manufacturing sector. In many countries, the lack of foreign exchange limited imports of necessary raw materials, equipment, machinery and spare parts, contributing to the poor performance in the manufacturing sector. Conversely, manufacturing output in export-processing zones of Mauritius and, to a lesser extent, Botswana, Madagascar and Namibia showed strong growth in 1999.

African manufacturing is expected to benefit from trade preferences given by the United States with the approval of the Africa Growth and Opportunity Act in November 1999. Kenya, Mauritius, South Africa, Zimbabwe and a few other countries will benefit most from duty-free access to the United States for exports of clothing, textiles and other manufactured goods.

Among the mineral-producing countries, increased demand for copper, gold and diamonds benefited producers, although prices, which strengthened slightly during the year from steep declines in 1998, still hovered, on average, around their historic lows in 1999. In Zambia, delays in the privatization of the Zambia Consolidated Copper Mines (ZCCM) lowered output in the mining sector, which accounts for 13 per cent of the country's GDP, by 15 per cent. The completion of the sale of 70 per cent of ZCCM's assets in January 2000, however, brings better prospects for Zambia's copper-mining industry.

Macroeconomic policy in Africa has been largely influenced by commitments of individual countries to targets, goals and implementation of policies recommended by international financial institutions and donor countries. Policies of countries under an IMF programme have emphasized tight monetary and fiscal policies to achieve internal and external balances as well as structural and institutional reforms to improve the investment climate and encourage private sector growth. As of December 1999, 16 African countries had programmes with IMF—under either the Enhanced Structural Adjustment Facility (ESAF) or the Poverty Reduction and Growth Facility (PRGF), which replaced the ESAF in November 1999 (see chap. II).

Economic reforms efforts were renewed with new Administrations in Nigeria and South Africa. The new civilian Administration in Nigeria unveiled a comprehensive set of policy proposals that emphasize a more prominent role for the private sector in the economic development of the country. The immediate concern of the new Government, however, has been the introduction of reform policies aimed at combating corruption, waste and mismanagement in the public sector, the armed forces and the oil industry. Meanwhile, in South Africa the new Administration reconfirmed the Government's commitment to the Growth, Employment and Redistribution (GEAR) macroeconomic strategy, which emphasizes improved employment creation and delivery of vital social services to the poor through strong private-sector growth within a framework of fiscal consolidation by the central Government. The GEAR strategy had achieved some success in the previous administration in delivering social services to the poor but fell far short of its employment-generating objectives. The unemployment rate in the formal sectors of the economy remains at a disturbingly high level, estimated at 34 per cent.[8]

Despite austerity efforts, the fiscal position of many African countries remained fragile in 1999. Fiscal deficits persisted in most oil-exporting coun-

[8] Since the 1994 elections, job losses in the formal sector of the economy have been estimated at over 500,000 as a result of the reintegration of the South African economy into world markets, efficiency gains in mining and manufacturing operations, and huge cutbacks in public-sector employment. See Adam Habib and Vishnu Padayachee, "Economic policy and policy relations in South Africa's transition to democracy", *World Development,* vol. 28, No. 2 (2000), pp. 256-258.

tries although some improvements were recorded. Algeria and Egypt maintained existing policies of fiscal restraint, while increased oil and gas revenues and proceeds from privatization provided some room for increased expenditure on social programmes. The Libyan Arab Jamahiriya, on the other hand, embarked on an expansionary fiscal policy after the suspension of sanctions. Increased government expenditures were concentrated on large-scale infrastructure projects and the acquisition of a wide range of goods and services that had been unobtainable while the sanctions were in effect.

For the oil-importing countries, continued budget deficits underline the structural weakness of these countries where the tax base is very narrow and tax collection inefficient. Integration efforts, in some cases, have led to lower public revenues. For instance, the adoption of a common tariff structure by members of the Union économique et monétaire ouest-africaine[9] (UEMOA) (West African Economic and Monetary Union) translated into reduced customs receipts and government revenues.

Consumer price inflation was largely subdued. The average rate of inflation for the region as a whole in 1999 at 6.9 per cent was only marginally higher than in 1998. Towards the end of 1999, inflation rates in oil-importing countries started to accelerate somewhat owing to the higher oil prices. Despite overall stable and relatively low inflation in the region in 1999, a few countries experienced double-digit inflation (Ghana, the Libyan Arab Jamahiriya, Nigeria, the Sudan, the United Republic of Tanzania, Zambia and Zimbabwe) owing to several factors including food shortages, currency depreciation and increased money supply.

The economic outlook for the region in 2000 is positive. While growth is expected to increase in 2000, it will remain below 7 per cent, the rate at which sub-Saharan African economies need to grow, as estimated by the Economic Commission for Africa (ECA), in order to halve poverty by 2015.[10] In the short term, growth is expected to accelerate in all oil-exporting countries, mainly owing to increased oil production, continued firming of oil prices, and rising FDI in the gas and oil sectors. Gabon is the exception to this trend, as oil output is constrained by depleted oil reserves and exploration expenditures have been severely curtailed. Most oil-importing economies are also set to expand. Exports may well benefit from the economic recovery in EU, the region's largest market, which in turn will support growth. South Africa might give an additional stimulus to Africa's prospects as growth in that country is set to accelerate, reflecting mainly the recovery of the Asian economies, the continued strength of the United States economy, and the general easing of domestic monetary conditions.

Economic prospects for Africa continue, however, to be highly vulnerable to weather conditions. Floods wreaked havoc in the southern African region in the aftermath of two tropical storms in February 2000. Botswana, Madagascar, Mozambique, Namibia, Zambia and Zimbabwe were all affected to some degree by heavy rains and flood damage, which caused loss of lives, displacement of large numbers of persons, and extensive damage to crops and infrastructure throughout the region. Mozambique sustained the most crippling damage and, as a result, the rate of growth of GDP is expected to decelerate in 2000. Furthermore, drought continued to affect several areas in eastern Africa during

[9] UEMOA members are: Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, the Niger, Senegal and Togo.

[10] ECA, *Economic Report on Africa 2000: The Challenge of Poverty Reduction and Sustainability,* May 1999 (available on the ECA web site at www.un.org/depts/eca/divis/espd/ecrep99.htm).

the so-called "short-rain" season (November 1999-January 2000), compromising agricultural growth and leading to severe food shortages in the region.[11]

Imports are expected to rise. Increased costs of manufactured goods and high fuel prices will consume a significant share of foreign exchange earnings. The need for imports to cover losses in flood-damaged countries in southern Africa and war-torn countries in other areas will further strain the countries' import capacity. Both trade and current-account balances are projected to remain in deficit, although in some oil-exporting countries external balances will continue to improve.

East Asia: broadening the recovery

East Asia witnessed a remarkable recovery in 1999. The aggregate GDP of the region (excluding China) grew by 5.8 per cent in 1999 after a contraction of 4.6 per cent in 1998 (see table A.4). All Asian emerging market economies that had fallen into recession during 1998 resumed growth during the first half of 1999. Most other countries in the region, which had been less severely affected by the crisis, performed relatively well. Economic growth in the region will accelerate to about 6 per cent during 2000-2001 and become more broad-based. While growth in the Republic of Korea will moderate, it will accelerate elsewhere in the region, thereby reducing growth disparities across countries. With the recovery of oil prices, growth will accelerate in Indonesia in 2000 but its sustainability remains uncertain. Prospects for most other countries in the region have also improved owing to the accommodative macroeconomic policy, the progress made in banking restructuring, improved fundamentals, and the generally favourable external environment.

The recovery of the crisis-hit countries (Indonesia, Malaysia, the Republic of Korea and Thailand) has been stronger than expected, except for Indonesia. The timing and strength of the recovery varied across countries but the gap narrowed over time. Indonesia, however, lagged behind other countries, because of political uncertainties and problems in implementing its adjustment programmes. It resumed growth in the second quarter of 1999, mainly as a result of increasing private consumption, but the recovery remained tepid.

The recovery of exports was a major factor underlying the resumption of growth in Malaysia, the Republic of Korea and Thailand. Although the volume of exports had started to grow in the second half of 1998, export revenues in United States dollars began to rise only in the first half of 1999 and soared at a double-digit pace in most crisis-hit countries during the second half of the year. Exports were driven by the strong import demand from the major developed countries, as well as by the resumption of regional trade as domestic demand picked up in these countries. The uptrend in the world electronics industry cycle, which had started in the fourth quarter of 1998, combined with year 2000 date conversion problem of computers (Y2K)-induced demand, was also a significant factor. Rising exports in turn contributed to the upturn in domestic production and investment, particularly in the manufacturing sector. In Indonesia, however, the persistence of acute financing problems constrained export growth.

The main thrusts for the upturn in domestic demand in the crisis-hit countries came from inventory adjustment and private consumption. Private consumption began to pick up during 1999 in response to policy stimuli, rising

[11] FAO/Global Information and Early Warning System for Food and Agriculture (GIEWS), *Africa Report No 1*, April 2000 (http://www.fao.org/WAICENT/faoinfo/economic/giews/english/eaf/eaf0004/ AF00043.htm).

income and wealth, and improved consumer confidence. Private investment, on the other hand, remained weak owing to excess capacity, ongoing private sector restructuring, cautious bank lending, and weak business sentiment. In Malaysia, the Republic of Korea and Thailand, however, machinery and equipment investment in export-related industries began to increase.[12] On the supply side, growth of industrial output, particularly manufacturing, regained strength in the second half of 1999 and led the recovery. Countries with a large export-driven electronics sector experienced the largest output gains. The capacity utilization rate reached 80 per cent in the Republic of Korea and Malaysia in late 1999, as compared with about 65 per cent at the height of the crisis. The construction sector remained weak. The service sector, particularly telecommunications, trade and tourism, improved in most countries. In Indonesia, on the other hand, industrial output was unstable and service output declined further, while agricultural output recovered in the first half of 1999 as weather conditions improved.

The rest of the region exhibited similar trends. An upturn in exports supported the recovery in 1999, while domestic demand, though strengthening, reacted more slowly. Growth in Singapore accelerated towards the end of 1999, led by exports of electronics and chemicals. In line with growing exports, domestic demand (particularly private consumption) began to recover gradually. All major sectors, except construction, registered positive growth, with the manufacturing sector providing the major impetus for recovery. In the Philippines, as in Indonesia, agricultural output recovered with the return of normal weather and led the recovery in 1999. Growth in manufacturing output, however, has been modest, largely because of lacklustre private demand. Domestic demand gradually recovered in Hong Kong Special Administrative Region (SAR) of China as labour-market conditions stabilized and equity markets rebounded. The economy of Taiwan Province of China remained strong despite damage from the September 1999 earthquake, thanks to surging exports of personal computers and semiconductors as well as reconstruction efforts. Though industrial output was robust, overall domestic demand was weak, owing partly to political uncertainties before the elections and the freeze of civil servants' wages after the earthquake.

Domestic demand will play an increasing role in 2000. Private consumption, supported by rising real disposable income and wealth, and the recovery of consumer confidence, will gain further momentum and assume a major role as the inventory cycle fades. Increased domestic demand in turn will set off favourable multiplier effects through trade in goods and services, thus supporting output growth in both industry and service sectors. Imports are expected to grow faster than exports and will narrow current-account surpluses in many economies. Rising investor confidence will result in an increase in foreign capital inflows that will be supportive of imports and investment.

On the supply side, the recovery will continue to be led in 2000 by the strong upswing in manufacturing sectors, thanks to sustained external demand and the continuing uptrend in the global electronics cycle, as well as rising local demand and restocking. However, heavy reliance of these economies on narrow lines of products, especially in fuelling their exports, makes them vulnerable to the global industry cycle.

[12] When compared with the same period in 1998, equipment investment in the Republic of Korea increased by almost 12.9 per cent in the first quarter of 1999 and expanded further by 37 per cent in the second quarter.

Crisis-hit countries had adjusted to the earlier massive withdrawal of private foreign finance by sharply curtailing imports. This was reversed rapidly in 1999, along with the easing of balance-of-payments constraints in these countries. Import bills measured in United States dollars increased in most countries as domestic demand picked up, depleted raw materials were replenished, and oil prices surged. As a result, current-account surpluses narrowed in some of these countries but remained sizeable. As investor confidence towards some countries improved, net foreign capital inflows, particularly for mergers and acquisitions (M&A), increased markedly.[13] This, combined with the current-account surplus, contributed to a further build-up of foreign reserves. In the Republic of Korea, for instance, the level of foreign exchange reserves exceeded $80 billion in March 2000, compared with $8.9 billion at the end of 1997.

Reflecting the recovery in production and/or job creation programmes, the unemployment rate fell in most countries in 1999. In crisis-hit countries, however, unemployment rates are still well above the pre-crisis levels as lay-offs from the ongoing corporate restructuring continue. In the Republic of Korea, the seasonally adjusted unemployment rate fell from the peak of 7.6 per cent in February 1999 to 4.4 per cent in February 2000. In Indonesia, on the other hand, unemployment increased further in 1999. In Hong Kong SAR, in the third quarter of 1999 the unemployment rate reached 6.5 per cent, a figure which is well above the levels recorded before the crisis (about 2.5 per cent).

Inflation in most countries of the region continued to fall sharply through mid-1999 from the peak in 1998, despite higher oil prices and rising demand (see table A.10). Such an outcome reflects excess capacity, competitive pressures and, in a number of countries, improved agricultural production and currency appreciation. In 2000, inflation is expected to rise moderately in most countries owing to the lagged effects of expansionary policies and higher commodity prices, as well as rising capacity utilization and wages.

Macroeconomic policies in most emerging market economies of the region remained expansionary in 1999 and fiscal stimulus, together with low interest rates, was a major contributing factor in the recovery. The strengthened exchange rates and lower inflation allowed these countries to cut interest rates and reduce reserve requirements in 1999. In many countries, interest rates fell below pre-crisis levels, Indonesia being an exception.

Despite lower interest rates, credit conditions remain tight, as banks' lending, although somewhat eased in a number of countries, has not returned to the normal levels yet owing to the new prudential rules and the weak asset base. In 2000, monetary policy is expected to remain accommodative in most countries of the region. A possible exception is the Republic of Korea, where monetary policy may be tightened in the second half of the year if inflation accelerates. Rising inflows of foreign portfolio capital and the appreciation of the won relative to the yen represent a policy challenge for the monetary authorities of the Republic of Korea.

Expansionary fiscal policy has played a key role in reviving domestic demand in these countries through the multiplier effect and, in the case of crisis-hit countries, in facilitating structural adjustment. This resulted in large fiscal deficits in most countries of the region (see table III.2). However, fiscal consolidation in most crisis-hit countries is not expected in 2000 in view of their need to sustain growth momentum, to continue with restructuring or to

[13] This is particularly the case for the Republic of Korea and, to a lesser extent, for Thailand. Indonesia, however, did not share this trend.

Table III.2.
FISCAL BALANCES OF SELECTED ASIAN COUNTRIES, 1996-1999

Percentage of GDP				
	1996	1997	1998	1999
Indonesia	0.2	0.0	-3.7	-2.3
Malaysia	0.7	2.6	-1.5	-3.8
Republic of Korea	0.3	-1.5	-4.2	-2.9
Thailand	2.4	-0.9	-3.4	-3.0

Source: Asian Development Bank, *Asian Development Outlook 2000.*

finance social programmes. However, as the recovery widens, an increasing number of countries will begin to shift policy towards a more neutral stance so as to address large public debts and/or to avoid overheating their economies. The Government of the Republic of Korea, for instance, has already planned to address its fiscal imbalance in 2000. Other countries began to make their fiscal policy more neutral in order to tackle the deficit. The Philippines and Singapore are cases in point. The trend, however, is not uniform across the region. In Taiwan Province of China, for instance, the government budget will remain expansionary in 2000 owing to infrastructure rebuilding and provision of subsidized loans for new housing.

The sustainability of the recovery in Asian emerging economies hinges on several factors. The strength of external demand is pivotal in supporting their exports. The return of large foreign capital inflows, particularly long-term, is a key element in sustaining higher growth in the region, which is otherwise resource-constrained. Insufficient investment in the past two years needs to be reversed in order to strengthen the competitive position of these economies and expand their growth potential. Thus, the speedy and successful completion of economic restructuring (discussed below) and the restoration of foreign investors' confidence are essential. Compared with two years ago, the vulnerability of these economies to volatile capital flows has been reduced significantly, but the remaining fragilities in the financial and corporate sectors need to be tackled in full to make them more resilient with respect to any future financial turmoil.

Restructuring is progressing

After a slow start, the implementation of structural reforms in crisis-hit Asian countries, accelerated in the latter half of 1999. Reforms have focused on overhauling the interrelated structural weaknesses of the financial and corporate sectors that were at the root of the Asian crisis. They have been implemented with the assistance and financial support of IMF. Malaysia has been an exception and does not have a programme with the Fund. Nonetheless, most of its structural reforms are very similar to those recommended by the Fund for the other crisis-hit countries.

Financial sector reform has been geared mainly to the elimination of non-performing loans (NPLs), the recapitalization of weak financial institutions, the reorganization of the financial system, and the enhancement of transparency and supervisory functions of the financial system. The restructuring of the corporate sector, on the other hand, includes the reduction of excess capacity

and corporate debt, and the promotion of good governance.[14] However, corporate sector restructuring received little priority initially. It was thought that, if the banking sector was overhauled, banks would be able to handle the corporate debt problem. This assumption was proved wrong. The deflationary effects from the financial crisis forced the real economy into a deep recession, thus leading to a dramatic surge in corporate bankruptcies and in NPLs. This underlined the fact that the problems in these two sectors were so closely interrelated that, without solving the corporate bad debt problem, banking restructuring would fail. This helped increase political momentum to pursue this issue, and the restructuring of the corporate sector began to receive greater attention. Moreover, structural reforms in the corporate sector would contribute to lowering the costs of financial restructuring, thereby enabling the government to recover costs through asset disposal more quickly. Resistance from vested interests, lack of funds, and ineffective enforcement, however, have impeded progress on this front. As a result, on balance, financial sector restructuring has advanced faster than corporate sector restructuring, although the progress in implementing both tasks has been uneven in speed and scope across countries.

Among the crisis-hit Asian countries, progress with structural reforms is most advanced in the Republic of Korea. The Government of the Republic of Korea opted for a more interventionist approach, which turned out to be more effective than the market-oriented approach initially adopted in other countries. By the end of 1999, the major tasks of its first round reform had been successfully completed. Recently, the Government has embarked on a second round to solidify and further broaden the reform, and particularly to strengthen the secondary financial market.[15] In Malaysia, the Government has also played an active role in the restructuring process and reforms have advanced. Progress in Indonesia and Thailand, on the other hand, was slow until late 1999 for lack of clear guidance from the Government with Indonesia facing additional difficulties owing to the political situation, including the emergence of separatist movements.

In the restructuring of the financial sector, many institutions were closed, merged and taken over by the government from the early stage. Some were sold to foreign investors. In the Republic of Korea, 328 non-viable financial institutions, including 10 banks, were merged or liquidated as of early 2000. In Indonesia, about one third of 160 private domestic banks were closed and 12 were taken over by the Government. Thailand closed down virtually all non-bank finance companies, but only one bank. It sold four banks to foreign investors. Conversely, Malaysia—with a relatively more resilient banking system—has not closed down any bank but it plans to further merge 54 banks into 10 banks in 2000.[16]

The balance sheets of banks were cleaned up and their capital base strengthened. Various measures, such as debt-equity swaps, debt write-offs, reductions in interest payments, debt-rescheduling and sales of non-core assets, were used. Countries also strengthened the independence of central banks and/or created entities to facilitate restructuring, typically asset-management agencies handling NPLs and those specializing in recapitalization. Other legal and regulatory adjustments—in the areas of bankruptcy procedures, prudential supervision and regulation, accounting standards, financial market deregulation, management discipline and accountability, ownership concentration, minority

[14] See also *World Economic and Social Survey, 1999* (United Nations publication, Sales No. E.99.II.C.1), chap. III, subsect. entitled "Structural reforms: mixed progress and box III.2.

[15] Efforts in that direction were intensified particularly after the Daewoo group (the second largest conglomerate) crisis in 1999 revealed the potential dangers for these institutions, especially for the investment trust companies (ITCs).

[16] There were 88 domestic banking institutions in Malaysia at the end of 1997 (Asian Development Bank, *Asian Development Outlook 2000),* available on the Asian Development Bank web site at www.adb.org/Publications/ado2000.

shareholder rights and labour-market rigidities—have been addressed to different degrees.

In all countries, the ratio of NPLs to total loans peaked during 1999, but has fallen since then. Most countries set up government-supported centralized asset-management agencies to address the NPLs, although Thailand opted for a decentralized bank-specific approach.[17] About 50-70 per cent of NPLs had been transferred to these agencies as of early 2000. In Indonesia and Thailand, however, banks are still saddled with huge low-quality loans. The ratio of NPLs to total debt in these two countries was estimated to be 60 per cent and 38.5 per cent, respectively, at the end of 1999, far above the corresponding ratio in the Republic of Korea and in Malaysia (about 10 per cent). In January 2000, the new Government of Indonesia adopted an ambitious banking-reform programme. It stresses four elements: capitalizing all banks to at least 8 per cent of assets by 2001, restructuring the banking system at the least public cost, strengthening supervision and governance, and deepening bond and equity markets. This new initiative, together with the recent IMF pressure for its implementation, is expected to accelerate the restructuring process.

With the exception of the Republic of Korea, the restructuring of the corporate sector has been slow, partly owing to the complexity of the problem and the inadequate legal framework. For restructuring large firms, all countries relied heavily on voluntary out-of-court settlements. The process has been delayed because the weak state of banks in most countries compromised their ability to function as lead bank in the debt workouts. Bankruptcy laws in Indonesia and Thailand, although amended, were not effective in 1999 owing to lack of enforcement. Since late 1999, however, Indonesia, Malaysia and Thailand have stepped up their corporate restructuring. The exit process has been further improved and compliance more seriously enforced.

In the Republic of Korea, after a slow start, progress has been considerable. The Government grouped firms into two clusters, the top 5 conglomerates and the other 59 smaller chaebols. It used so-called big deals (forced mergers and business swaps) for the former and voluntary debt workouts and court-supervised insolvency procedures for the latter. The big deals among the top five conglomerates have been the key feature of corporate reform in the Republic of Korea. It focused on five principal elements: enhancement of transparency, elimination of cross-loan guarantees, debt reduction, specialization in core businesses, and strengthening of managerial accountability. The decision to dismantle the Daewoo group in August 1999 sent out a strong message that henceforth "no company is too big to fail". The restructuring of the remaining four top conglomerates speeded up during 1999. Excluding Daewoo, they were able to reduce their overall debt-to-equity ratios to below 200 per cent by the end of 1999 from 470 per cent in mid-1997. Cross-loan guarantees, however, continued for some time but the practice ended by March 2000. Nevertheless, problems still remain as demonstrated by the liquidity crisis in Hyundai in May 2000.

Progress in Indonesia was slow. Despite the creation of the Indonesian Debt Restructuring Agency (INDRA) (for foreign debt-restructuring) and the launching of the Jakarta Initiative (for out-of-court voluntary corporate settlements), both in 1998 and 1999, corporate debt-restructuring has not progressed much. In addition to other problems, the large external indebtedness of the private sector (about $65 billion), often involving several creditors, hindered the process.

[17] Malcolm Dowling, "Economic performance outlook and policy agenda for Asia ", paper presented at the Project LINK meeting, 17-20 April 2000, New York.

Out of 284 companies that joined the Jakarta Initiative, only 27 had their debts restructured by the end of September 1999. Since the beginning of 2000, however, corporate restructuring in Indonesia has advanced somewhat faster.

Progress has been slow in Thailand, too, as most major corporations have been reluctant to reform on their own. The out-of-court settlements under the Corporate Debt Restructuring Advisory Committee had some success in resolving a number of cases, but the Committee's effectiveness was limited by its inability to enforce deadlines. On the other hand, in Malaysia, where the corporate sector problem was less serious than in other countries, the process speeded up in the second half of 1999. However, the Government may face some limit with respect to closing down enterprises owing to the potential negative social consequences.

Restructurings are often expensive and the burden frequently falls on the Government, at least initially. The Asian economies were no exception.[18] Most NPLs expunged from banks' balance sheets are now in government possession and the Government currently owns a significant part of the banking sector. Sales of these assets may help to offset these costs, but most commentators expect this contribution to be limited. The total gross public cost of financial sector restructuring has been estimated to range from 12 per cent of GDP in Malaysia to 45 per cent of GDP in Indonesia.[19] It has been financed largely by public bond issues and, to a much lesser extent, by asset swaps. As a result, the public debt in these countries surged by the end of 1999, becoming a major medium-term policy challenge for all of them.[20]

As the recovery solidifies, complacency may erode the momentum of reform efforts. In spite of a modest turnaround recently, the banking system is still not fully operative in any of the crisis-hit countries. Much needs to be done in order for these institutions to resume normal lending. In particular, unless the huge bad debt overhang is cleaned up, the ability of banks to intermediate will continue to be severely constrained. Intensive restructuring is especially needed in Indonesia. Completing reforms to a reasonable extent and building up resilient and competitive financial systems are crucial for strengthening the ongoing recovery and for securing a base for sustainable long-term growth.

China: the challenges ahead

The deceleration in output growth and the deflation in the general price level of the last two years have recently been alleviated, owing largely to stimulus policies. Albeit lower than in 1998, GDP registered a 7.1 per cent increase in 1999 (see table A.4). The short-term outlook is positive, with GDP growth about 7 per cent for 2000-2001, but this is predicated on continued expansionary macroeconomic policies to boost effective domestic demand and a stable international economic environment. In the longer run, however, China will face some challenges, including the country's entry into the World Trade Organization and the subsequent structural adjustments; and the continued reform of State-owned enterprises (SOEs).

China started 1999 with a worsening economic situation. Exports dropped by about 10 per cent in the first half of 1999, relative to the first half of 1998, owing to weak global demand, especially in Asia. Private consumption demand stagnated owing to large lay-offs by the SOEs, which led to a continued decline in prices. However, by mid-1999 economic conditions had started to show

18 The Republic of Korea, for instance, spent 64 trillion won (about $48 billion) in State funds on the stabilization of its debt-ridden financial sector.

19 See Carl-Johan Lingren and others, *Financial Sector Crisis and Restructuring: Lessons from Asia*, IMF Occasional Paper No. 188 (Washington, D.C., 1999), p. 40.

20 The public debt had surged to 23 per cent of GDP in the Republic of Korea, 46 per cent of GDP in Thailand, and 100 per cent of GDP in Indonesia by the end of 1999.

improvement, including a significant turnaround of exports. Prices had stabilized and started to rise by the beginning of 2000 after a continuous decline for more than two years. Nevertheless, domestic demand remains weak. Total fixed investment grew only by 5 per cent in 1999, the lowest figure in a decade, as investment growth in the State sector decelerated from 23 per cent in the first quarter of 1999 to 4 per cent in the fourth quarter.

The external balance remained positive, although the current-account surplus dropped by $10 billion in 1999 owing to strong import growth and relatively weak export performance.[21] FDI at $40 billion contracted by 11 per cent. Foreign reserves reached $155 billion by the end of 1999. The yuan/United States dollar exchange rate remained stable and pressures for devaluing the yuan have recently subsided because of the real devaluation that took place owing to domestic deflation, as well as the fact that the currencies of Asian crisis-hit countries—some of China's main competitors—have appreciated to some degree.

Since the beginning of 1999, economic policies have increasingly been focused on efforts to further bolster domestic demand. New measures were adopted. Monetary policy has become more accommodative. In mid-1999, the central bank of China lowered reserve requirements and made its seventh and most aggressive reduction of interest rates in three years. The interest rate for one-year deposits now stands at 2.25 per cent, substantially below the peak of 11 per cent in 1996. However, owing to deflation, real interest rates remain relatively high.

In parallel, fiscal spending in 1999 accelerated, financed by bonds. The Government raised public spending on wages, pensions and unemployment benefits by an additional 60 billion yuan to stimulate private consumption more directly. As a result, the budget deficit for 1999 reached 180 billion yuan, about 2 per cent of GDP. Additionally, a new bill was passed to tax interest income from savings deposits in order to reduce the high saving rate and encourage consumption.

Macroeconomic policies are expected to remain expansionary. The budget for 2000 features an increase of expenditure by 12 per cent and projects a deficit of 230 billion yuan.[22] On the monetary front, room for further lowering interest rates seems to be limited.

As a result of the reforms implemented to date, the financial situation of the SOEs has improved. The total losses of the sector declined by 16 per cent in 1999, and some large and medium-size enterprises in traditional industries (such as textiles, construction materials, and railroad transportation) reported profits. However, the large number of redundant employees, the problem of high indebtedness, and the heavy burden of providing social services remain serious. The SOEs laid off some 5.6 million workers in 1999, leading to the deterioration of consumer confidence and weak consumption demand.

Towards the end of 1999, the authorities adjusted their strategy for reforming the SOEs. First, reforms will be implemented over a longer period and are to be completed by 2010. Second, SOEs will concentrate operations in a few sectors related to the so-called lifeline of the national economy. A large number of them will be reorganized in various types of ownership-sharing arrangements. Third, debt-to-equity swaps will be implemented, and this will also improve the balance sheets of State-owned banks.[23] Fourth, SOEs will be grad-

[21] Import growth registered 18 per cent in 1999, but a large part was on account of a successful crackdown on smuggling activities, as reflected by the fact that tariff revenues almost doubled.

[22] There was an accounting change in budget 2000 by including interest payments as current spending. Otherwise the planned deficit would have been 155 billion yuan.

[23] Four asset management corporations (AMCs) have been established to handle the debt-equity swap programme. The debt to be swapped amounts to one half of the outstanding loans of the State-owned commercial banks. The programme involves two linked transactions: the swap of selected enterprise debt into equity to be held by the AMCs and the purchase of the swapped debt from banks by the AMCs. As a major shareholder, the AMCs will supervise and participate in restructuring the selected enterprises. The programme has already made remarkable progress.

ually released from their functions as providers of social services. These measures, including training programmes for laid-off workers, are expected to alleviate the problems of the SOEs in the long run.

China's entry into the World Trade Organization presents another major challenge, as well as an opportunity for sustaining fast economic growth. Following the agreement with the United States in November 1999 on the terms for China's proposed accession to the World Trade Organization, China reached bilateral agreements with a large number of other World Trade Organization members, including EU in May 2000 (altogether 37 members required bilateral negotiations with China). According to these agreements, China will reduce both tariff and non-tariff barriers for agricultural and industrial products, as well as remove export subsidies. It will also open more sectors of its economy, especially services, to foreign companies and investors. Foreign companies will be allowed to operate a full range of services in the travel and tourism industry. They will also be allowed to engage in transport and distribution activities. Full foreign ownership will be allowed in the banking sector after 2005. In turn, China will be entitled to all rights of a World Trade Organization member, including permanent normal trading relations (PNTR) (formerly most-favoured nation (MFN)). If all the legal and protocol procedures proceed well, as expected, China is likely to become a full member of the World Trade Organization later this year.

The impact of these agreements will be deep and widespread. Tariff reduction is likely to benefit consumers and bring welfare gains to the economy at large through more efficient allocation of resources. The opening of economic sectors to foreign companies and investors is expected to attract foreign investment and new technology to the country. On the other hand, many sectors in China (such as agriculture, automobile production, telecommunication, and banking) will be exposed to international competition. This may lead to losses and lay-offs by some of these sectors.[24] The significant impact of World Trade Organization membership lies in the need for ongoing economic reforms in both economic and financial sectors and for domestic legislation, regulatory measures, and new institutions supporting the systematic integration of China into the global market.

China's entry into the World Trade Organization is also likely to have a significant impact on the world economy, especially that of its neighbours. Trade liberalization in China implies that existing patterns of comparative advantages among developing and developed economies are likely to be redefined. While some countries will face increased competition from China in some current export markets, a more efficient and open Chinese economy should, on balance, bring considerable benefits to the global economy over the longer run, in the form both of enhanced specialization, and hence efficiency, in world production and of greater diversification, and hence welfare, in consumption.

[24] Li Xuesong and Arjan Lejour, "Impact of China's access to the World Trade Organization: a dynamic CGE Analysis" (Joint Study Programme by the Central Planning Bureau of the Netherlands and the Chinese Academy of Social Sciences, 1999, mimeo. (Note: CGE stands for computable general equilibrium.)

South Asia: mixed performances

South Asian countries, which had escaped the major negative impacts from the Asian crisis, improved their economic performance as the rate of growth of regional GDP accelerated to 5.6 per cent in 1999 (see table A.4). Country performance, however, was uneven. Economic growth picked up gradually in most

countries during the second half of 1999 and is expected to continue in the near term. Growth in the region is expected to be over 6 per cent during the period 2000-2001.

The mixed performance in 1999 mainly reflects differences in domestic factors, particularly climatic conditions, political circumstances, policy and structural problems. Favourable weather led to increased agricultural output, which supported GDP growth in a number of countries. On the other hand, pervasive political uncertainties in most countries in the region weakened the effectiveness of government policies, increased fiscal expenditures, and discouraged economic activity to varying degrees. Structural reforms and macroeconomic adjustment policies were also delayed, interrupted or enacted with difficulties. Conversely, external conditions facing the region were generally favourable.

Economic growth accelerated in India, led mainly by manufacturing. The recovery in the industrial sector was fairly broad and, combined with an improving service sector, more than offset the slowdown in agriculture. Industrial output was driven by rising demand for consumer durables and capital goods, and by a strong rebound in exports. Rising information technology (IT)-related demand and tourism supported the service sector. In Nepal, growth was led by exports and manufacturing as well as by the bumper crop late in the year. Growth in Pakistan continued to be constrained by political uncertainty, lingering balance-of-payments problems, the lagged effects of the poor harvest in late 1998, and the restrictive macroeconomic policy. Nonetheless, growth began to increase modestly in late 1999 owing to improved agricultural production.

In Bangladesh, recovery from the severe flood damage in July-September 1998 was faster than had been expected, and was led by two subsequent bumper crops. However, growth moderated in 1999 owing mainly to the weakness in exports and manufacturing output. Growth in Sri Lanka continued to slow down in the first half of 1999. However, a modest recovery occurred in the second half of the year, supported by an upturn in the service sector and the external impetus given to export-oriented industries.

Inflation, which had risen sharply during 1998 in most countries, fell to single-digit levels in the first half of 1999 mainly as a result of the recovery in food supplies,[25] low commodity prices, and sluggish domestic demand (see table A.10). In view of subdued inflation, relatively stable exchange rates, and the need to stimulate growth and/or reduce the debt-service burden, monetary policy was eased in an increasing number of countries. Most countries lowered interest rates and the cash reserve ratio in 1999.

Inflation in India, Pakistan and Sri Lanka, however, is expected to pick up moderately in 2000 in line with rising domestic demand, higher oil prices, and a one-off increase in utility rates and the sales tax. Nevertheless, inflation in these countries is anticipated to remain below trend on account of policy prudence, adequate supplies of agricultural products, and increasing competition. In Bangladesh and Nepal, on the other hand, inflation will continue to ease.

Most countries of the region continue to face unsustainably large fiscal deficits. If not addressed, these will fuel inflation and restrain investment and growth in the longer run. These countries suffer from severe tax collection problems, owing largely to the sizeable informal economy and poor gover-

[25] Food constitutes an unusually large share in the consumer basket. In Bangladesh, for example, its share is 60 per cent.

nance. Fiscal consolidation continues to remain a critical policy issue in the region, especially in India and Sri Lanka.

In India, the fiscal deficit widened to 5.5 per cent of GDP in fiscal 1998/1999 (ending March) from 5 per cent in the previous year, owing largely to increased government spending and delays in the privatization programme. The deficit in fiscal 1999/00 is estimated to have narrowed somewhat but remained above 5 per cent of GDP. A major fiscal reform is envisaged for fiscal 2000/01, but the new budget foreshadows increased defence spending[26] (by 30 per cent) and fails to cut subsidies and other expenditures deep enough. Thus, the deficit is not expected to decline much in the near future. Sri Lanka made some progress in improving revenue collection and controlling government spending in the recent past. However, its deficit declined only modestly owing to low privatization proceeds, the high cost of the civil war, and rigidities in spending (such as the large interest payments on public debt and the civil servants' payroll). Pakistan, on the other hand, kept its fiscal policy tight and reduced its fiscal deficit further to 4.5 per cent of GDP in fiscal 1998/99 (ending June) from 5.6 per cent in the previous year. The public debt service burden, however, is unsustainably large and fiscal consolidation remains a major policy problem.

Growth in the region in 2000 is expected to be modestly higher and broader-based than in 1999. The return of normal weather, favourable external conditions, relaxed monetary policy, and, in a number of countries such as India and Pakistan, improved political stability and renewed reform efforts will be the main driving forces. Domestic demand in most South Asian countries will be supported by rising income, easy monetary policy, and increasing confidence. In India, surging stock prices also seem to have a tangible positive wealth effect. Agricultural output is expected to be favourable in 2000. Increased rural incomes in a number of countries, including Nepal and Pakistan, will support private consumption. The upturn in domestic demand, together with rising exports, will boost industrial output.

India is likely to be the best performer in the region in 2000, given the ample signs of strengthening recovery. With the strong commitment of the new coalition Government to eliminating structural obstacles to growth and the prevailing prudent monetary policy, India's economy appears to be on the road to a higher sustainable growth path. Strong growth is expected in Nepal in 2000 owing to the lagged effects of the bumper crop and favourable exports. Growth is expected to rebound only modestly in Bangladesh in 2000 as rural consumption is supported by higher income from the bumper crops and the industrial sector recovers from the flood damage.

Economic prospects for Pakistan have improved in recent months owing mainly to good cotton and rice harvests, which will support exports and the textile industry, and reduced political uncertainty. The new Government is negotiating a new reform programme with IMF that may include more serious tax collection measures. The expected resumption of financial assistance by IMF will ease the country's tight balance-of-payments situation. Nonetheless, debt-servicing obligations on its $38 billion foreign debt falling due by the end of 2000 will maintain pressure on the country's external position.

[26] Reflecting the heightened tension with Pakistan since the Kargil crisis.

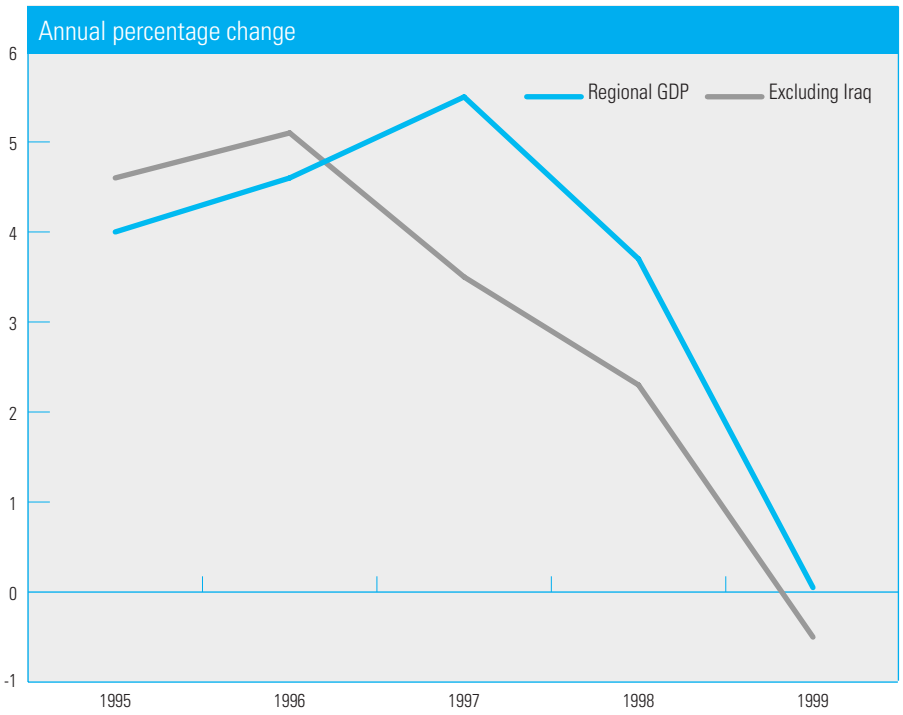
Western Asia: increased windfall revenue without economic growth

Despite increased oil prices, economic growth in Western Asia decelerated sharply in 1999 to 0.5 per cent from 3.7 per cent in 1998. With the exception of Iraq, oil-exporting countries in the region reduced their oil production in accordance with the OPEC quota policy agreed in March 1999. Agricultural production declined as a severe drought affected major producers of the region (the Islamic Republic of Iran, Iraq, Jordan and the Syrian Arab Republic). In addition, oil-importing countries were confronted with declining private and official unrequited transfers, reduced trade and transit flows, and depressed tourism activities. A severe earthquake devastated Turkey and caused the economy to contract sharply in 1999.

As in previous years, the regional rate of growth in 1999 was heavily influenced by the circumstances surrounding the Iraqi economy. Under the framework of the food-for-oil programme, Iraq did not need to restrict oil production. As a result, oil output increased in Iraq in 1999 and GDP grew as a result. If Iraq is excluded from the regional average, GDP in Western Asia contracted in 1999 (see figure III.6).

Internal and external imbalances improved. All oil-exporting countries had framed their 1999 budget under the assumption of lower oil prices, and tightened their fiscal policies further. As oil prices rebounded during 1999, these countries enjoyed an unexpected windfall but maintained their fiscal stances. On the expenditure side, capital spending was drastically cut as infrastructural, industrial and agricultural projects were frozen, delayed or cancelled. Current spending, aid grants and soft loans were reduced, although moderately.

Figure III.6
WESTERN ASIA: RATES OF GROWTH OF REAL GDP, 1995-1999



Source: UN/DESA.

Recruitment of civil servants continued to be frozen and public wages rose only slightly. Consumer subsidies were reduced only marginally. As in the past, defence and security outlays proved to be difficult to curtail. Additionally, no attempt was made to reform the huge welfare system, as the issue remains politically highly sensitive. Some countries nonetheless used the extra fiscal revenues to address some long-standing issues confronting their public finances. In the Islamic Republic of Iran, for example, the extra revenues contributed to financing external debt service and helped in avoiding debt rescheduling. More importantly, most countries began to clear their arrears with local private contractors in late 1999, giving a boost to the depressed private sector.

On the revenue front, no new initiative was launched in 1999 although import duties, user charges on utilities and other fees were raised. The corporate income tax rate was also raised in some countries. In Oman, for instance, it increased from 7.5 to 12 per cent. These efforts, coupled with the unexpected windfall export revenues, helped in relieving pressure on public finances.

As a result of these measures, budget deficits were dramatically reduced in most oil-exporting countries with the exception of the Islamic Republic of Iran and Iraq. For instance, fiscal deficits in Saudi Arabia improved from 9.4 per cent of GDP in 1998 to 4 per cent of GDP in 1999. The improvement was more pronounced for the United Arab Emirates, where budget deficits declined from 17 per cent of GDP in 1998 to an estimated 5 per cent of GDP in 1999. Fiscal deficits in most oil-exporting countries were financed with development bonds and treasury bills sold to domestic financial institutions such as State pension funds, insurance and social security agencies, and commercial banks.

Most oil-importing countries also conducted tight fiscal policy. Capital spending declined in 1999, except for Turkey owing to the reconstruction efforts in the aftermath of the August 1999 earthquake. Duties on some imported products, such as foodstuffs, tobacco, clothing, perfumes and flowers, increased. Income and corporate tax rates also rose. With the exception of Lebanon and Turkey, budget deficits relative to GDP improved sharply in the oil-importing countries.

Trade balances improved as well. Although the volume of oil exports declined, the rise in oil prices boosted export revenues. Petrochemical exports also increased in view of the upturn in South-East Asian markets. In oil-exporting countries, import demand was subdued, mainly owing to restrictive fiscal policy. Current-account deficits improved sharply in most oil-exporting countries. Conversely, oil-importing countries faced deteriorating terms of trade as non-oil commodity prices remained depressed in 1999. Nevertheless, most countries managed to increase their export earnings slightly, while imports were drastically cut, reflecting the fiscal consolidation pursued by these countries. As a result, trade deficits narrowed in 1999, but current-account deficits widened in most oil-importing countries owing to the heavy debt-service burden and reduced inflows of workers' remittances, grants and soft loans.

Foreign exchange reserves rose sharply in most oil-exporting countries in the region in 1999. Monetary authorities maintained a positive interest-rate differential relative to United States interest rates. The tight monetary policy helped to reduce inflation (see table A.10) and, with the exception of the Islamic Republic of Iran and Iraq, most countries experienced low inflation, with some countries (Bahrain, Jordan, Kuwait and Saudi Arabia) achieving

annual inflation rates below 2 per cent. However, inflationary pressures picked up as 1999 progressed, mostly owing to the partial removal of subsidies on utilities, health care and other public services. In oil-importing countries, restrictive monetary and fiscal policies helped to keep inflation low in spite of rising oil prices. Israel tightened monetary policy in early 1999 to maintain the new sheqel strong and contain inflationary pressures. As a result, annual inflation decreased to 1.3 per cent in December 1999, the lowest in the last three decades, and well below the Government's target of 4 per cent. On the other hand, Israel reported very low rates of growth, with per capita GDP stagnating for the third consecutive year, and unemployment rose to 9.7 per cent during the third quarter of 1999. As long as interest rates are kept high to prop up the new sheqel, inflation remains low, but growth is compromised.

Unemployment continued to rise elsewhere in the region, affecting younger workers in particular. In most oil-exporting countries, the indigenization of the labour force has been high in the policy agenda for some time and was extended in 1999, but unemployment continued to be high.

Among the large oil-importing countries of the region, Turkey suffered a severe recession in 1999. Prior to the earthquake, the Turkish economy had been hard hit by the Asian and Russian financial crises. One fifth of the country's trade in recent years was with the Russian Federation, and Turkish companies were very active in that country. Because of the Russian crisis, exports dropped sharply, while domestic industrial production suffered from stiff competition from cheaper Asian products. To boost economic growth while lowering inflation, at the beginning of 1999 Turkey introduced reforms in the banking sector, the social security system, and the agricultural sector, and privatized some public enterprises; but the earthquake derailed these initiatives, as over 15,000 lives were lost and there was extensive damage to the country's industrial base. GDP declined by 5.5 per cent in 1999. A new disinflation programme was launched at the end of 1999. It includes a strong fiscal adjustment while monetary policy is constrained, as base money can be created only if the central bank's net foreign assets increase. The exchange rate is to function as the nominal anchor of the economy and a pre-announced devaluation path (20 per cent) was adopted during the first year of the adjustment. After that, a more flexible exchange-rate regime will be introduced.

The region's economic prospects for 2000 are positive. Oil production will increase as countries respond to the new OPEC agreement. Many large-scale investment projects frozen during 1998-1999 owing to the oil price slump will be reactivated thanks to higher oil revenues. Recovering export markets in South-East Asia are also providing a boost to some countries in the region. Agricultural output should increase as major producers recover from the drought. Increased workers' remittances, together with official transfers and expanded tourism activities, are expected to give a boost to oil-importing countries of the region. In addition, reconstruction efforts in Lebanon and in Turkey should provide a stimulus to the region's economic growth. As a result, growth is expected to accelerate to 4 per cent in 2000.

Latin America and the Caribbean: economic recovery under way

Following the slowdown in 1998, GDP growth stagnated in Latin America and the Caribbean in 1999. There were, however, sharp contrasts: while Mexico and several Central American and Caribbean economies expanded at moderate to high rates, most South American countries experienced severe recessions. Out of the 24 economies monitored by the Department of Economic and Social Affairs of the United Nations Secretariat, 12 failed to register positive per capita GDP growth during the year. Contrary to initial expectations, the regional economic crisis proved to be short-lived, and by the end of 1999 there were signs of a turnaround. The region is expected to rebound strongly in 2000 and accelerate further in 2001.

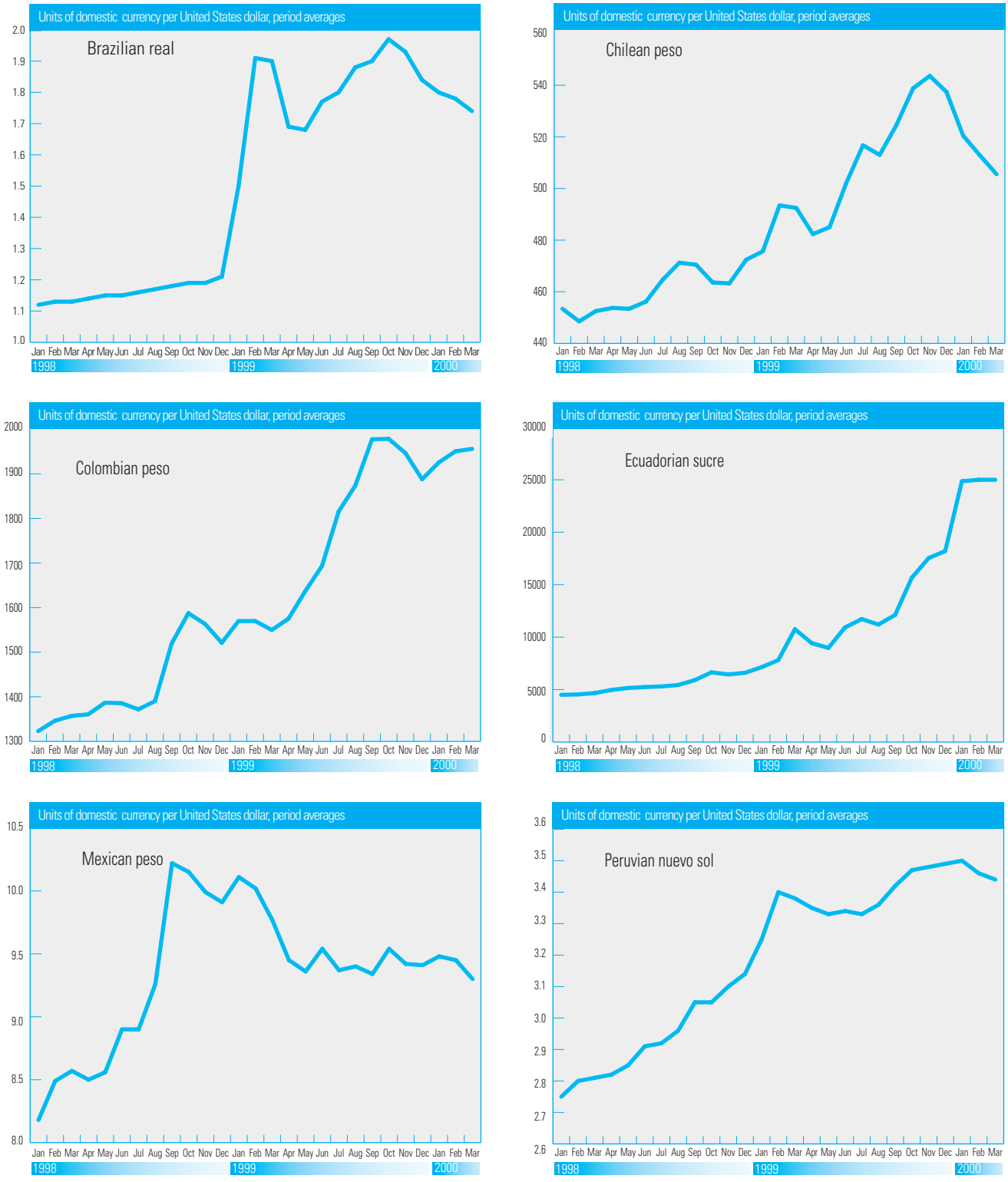
Several negative shocks affected the region during 1998-1999. Adverse weather conditions and natural disasters had high costs in terms of human lives, physical infrastructure, and lost crops. The collapse of prices of non-fuel commodities observed in 1998 continued for most of 1999, and it was only towards the end of the year that prices of minerals and metals began to recover. The terms of trade for many economies of the region deteriorated further in 1999. Foreign finance became scarcer and costlier both after the Russian default in August 1998 and after the devaluation of the Brazilian currency in early 1999.

Latin American authorities took tough adjustment measures to address these shocks. Initially, monetary policy was tightened to preserve existing exchange-rate arrangements and maintain price stability. A firm grip was kept on fiscal policy in most countries, but the fiscal gap widened. Higher interest rates at the end of 1998 and the beginning of 1999 constrained domestic demand and led to an economic slowdown in some countries, while it accentuated or brought about a recession in several others, particularly in South America. The contraction of regional trade, particularly within the Southern Cone Common Market (MERCOSUR), and lower international demand for commodities exported by the region compounded the problem. Interest-rate increases were insufficient to sustain the exchange-rate regimes (see figure III.7), and so several countries were forced to rethink their foreign exchange policies (see box III.4). In the second half of 1999, the move towards flexible exchange rates and a more enabling external financial environment created the conditions for a gradual and cautious relaxation of monetary policy. Fiscal austerity was also relaxed in a few countries and the region slowly started to recover in the last quarter of 1999.

In contrast to the East Asian crisis-hit countries, financial markets in Latin America did not melt down in 1999. Earlier reforms, including improved banking regulation and supervision, and the increasing presence of foreign financial institutions helped to avoid an acute crisis and panic runs in the sector; Ecuador was the notable exception. The deep recession in many countries, however, weakened the domestic banking systems and reduced the availability of credit, especially for SMEs.

The better-than-expected, if still dismal, performance of the region in 1999 was due to the fact that Brazil, which accounts for over 40 per cent of the region's output, did not collapse as anticipated in the beginning of the year. Brazilian output grew by 1 per cent in 1999, supported by a vigorous rise in agricultural output and a small expansion of services, while industry contracted only slightly because import substitution took place when devaluation

Figure III.7.
SELECTED LATIN AMERICAN COUNTRIES: NOMINAL EXCHANGE RATES, JANUARY 1998-MARCH 2000



Source: IMF, *International Financial Statistics* (various issues).

Box III.4.

RETHINKING EXCHANGE-RATE REGIMES IN LATIN AMERICA

Speculative attacks on the currencies of a number of emerging market economies characterized the international financial turbulence of 1997-1999. In Latin America, countries' responses have not been uniform – some economies switched to a floating regime, while others opted for or renewed their commitments to fixed regimes.

In January 1999, Brazil devalued its currency, the real, and allowed it to float, following a costly defence against speculative attacks at the end of 1998.[a] The real quickly plunged but later recovered some of its value (see figure III.7). In the wake of the Brazilian devaluation, policy makers in Argentina reacted to financial instability by reaffirming in early 1999 their commitment to their currency board arrangement – the only one in Latin America. They also announced that they were exploring the possibility of dollarization.[b] In September 1999, Chile abandoned its currency band but under less dramatic circumstances than in Brazil. It was a part of a gradual move towards increased liberalization of Chile's external sector and was aimed at obtaining additional policy flexibility in coping with economic recession. Additionally, Colombia (September 1999) and Ecuador (February 1999) floated their currencies. The exchange-rate currency bands, which set the ranges in which the countries allowed their currencies to fluctuate within a predetermined range, had been widened twice in both countries since the second half of 1998 and had lost credibility. Their defence, as in the case of Brazil, had been draining official reserves. While the floating of the Colombian peso was temporarily effective in offsetting pressures on the currency (see figure III.7), the measure was far less effective in Ecuador. The Ecuadorian sucre continued to lose value and the economy plunged into a deep recession, while inflation got out of control. In January 2000, Ecuador radically changed its foreign exchange policy when it announced the adoption of the United States dollar as legal tender.

These developments seem to lend support to the view that intermediate exchange-rate regimes, such as crawling pegs or currency bands, are inherently unstable and unsustainable in a world of integrated financial markets and increased capital mobility. Under these circumstances, either free floating or strictly fixed regimes are held to be preferable arrangements. In practice, by early 2000 almost all large Latin American economies had adopted one of these two "extreme" exchange-rate regimes: floating (Brazil, Chile, Colombia, Mexico and Peru) or strictly fixed (Argentina), despite their different degrees of integration into international capital markets and development of their domestic financial systems. Intermediate regimes are still present in the region: Uruguay and Venezuela with crawling bands and Bolivia, Costa Rica and Nicaragua with crawling pegs.

The suitability of alternative exchange-rate regimes depends on a country's specific policy and institutional context and on the other instruments available for policy makers. A currency regime does not exist in a vacuum. It requires, among other things, coherent fiscal and monetary policies. Moreover, no foreign exchange regime by itself is a panacea for improving a country's economic prospects. Dollarization has been advocated for Argentina, for instance, because the country has been suffering the consequences of having a strictly fixed exchange-rate regime while not fully enjoying the benefits of that regime. Argentina adopted a currency board arrangement in 1991 to ensure financial discipline and thereby control inflation. The arrangement enhances the credibility of policies pursued by the economic authorities, but it prevents them as well from acting to offset an economic slowdown. These consequences were felt during the Mexican currency crisis in 1994-1995 and, more recently, during the Brazilian currency crisis in early 1999. Owing to the currency board with its fixed rate for the Argentine peso, the negative shocks that hit the economy had to be absorbed through sharp contractions in output and employment. At the same time, despite the country's commitment to the currency board, financial contagion could not be avoided. As a result, Argentina's interest rates are much higher than those of the United States dollar, to which the peso is pegged.[c]

Dollarization, it has been argued, would be irreversible, thus imparting greater credibility, making Argentina much less vulnerable to financial contagion, and bringing its interest rates closer to

[a] See *World Economic and Social Survey 1999* (United Nations publication, Sales No. E.99.II.C.1), chap. III, subsects. entitled "The Brazilian currency crisis and financial contagion" and "Contagion effects of the Brazilian crisis".

[b] Dollarization is the adoption of the United States dollar or any other foreign currency as the domestic legal tender.

[c] Average annual lending rates were about 11 per cent in Argentina and 8 per cent in the United States in 1999. In real terms, the difference was even larger, as Argentina suffered deflation and the United States experienced low but positive inflation in 1999. The spreads for Argentine sovereign bonds (over United States Treasury bills) increased up to 1,000 basis points in September 1998 after the Russian default. They declined for a while, but were up again to more than 800 in January 1999 following the Brazilian devaluation.

Box III.4 (continued)

those prevailing in the United States. However, even without a devaluation risk, the risk of external default does not disappear. The imbalances and structural weakness that underlie the risk of external default would still need to be addressed and corrected. Against this background, Argentina is maintaining the currency board while renewing its fiscal consolidation efforts and implementing some structural reforms. Improved economic fundamentals are expected to eventually lead to increased inflows of external finance, thus helping the economy to recover from the recession (of 1999). Some analysts, however, question this strategy by arguing that the currency board is like a straitjacket that does not permit Argentina to develop a sustainable pattern of growth, correct its structural current-account deficit, and reduce its dependence on external finance.

Ecuador announced its dollarization plans at the most critical point of its economic deterioration since 1998, when the economy suffered severe adverse shocks (El Niño and the plunge of commodity prices, especially oil). Confidence in the currency had collapsed owing to a severe banking crisis and the freezing of most of the bank deposits in March 1999. The default on Brady bonds and subsequently on its Eurobonds in September 1999 undermined confidence even further. Measures such as the issue of public sector bonds to support viable troubled banks and attempts to reach an agreement with foreign debtors were not successful. The exchange rate of the sucre against the United States dollar suffered a nominal devaluation of about 220 per cent over the 12-month period after the currency was floated (see figure III.7). The annual inflation rate accelerated from about 40 per cent at the beginning of 1999 to 90 per cent in February 2000.

With dollarization, Ecuador has been replacing sucres in circulation by United States dollars (except for coins in small denomination), thus becoming the biggest independent country that is officially dollarized. The measure aims at "importing" monetary discipline from the United States. It also leaves the country with fewer instruments to deal with adverse shocks in the future, as there is no longer a foreign exchange policy while monetary policy is already highly restricted because it is subject to the Fed's monetary policy. The latter will not take into account the needs of the Ecuadorian economy. Yet there are sharp differences in the economic structures and challenges confronting both countries. Consequently, in case of future negative shocks in Ecuador, output and employment will have to shoulder most of the burden of adjustments if domestic prices and wages are not flexible enough.

While dollarization may be effective in stabilizing and lowering inflation in Ecuador, it will not address by itself the underlying problems that brought about the collapse of the sucre. Moreover, dollarization imposes upon Ecuador significant challenges to transform its economy. In particular, Ecuador needs to address problems in its financial sector and to upgrade banking regulation and supervision as the central bank, unable to create liquidity, cannot act as the lender of last resort. Fiscal consolidation is also required as monetization of public deficits will not be possible under dollarization. Ecuador has lost seigniorage as one source of fiscal revenues.[d]

The Government of Ecuador therefore launched the dollarization plan together with an ambitious economic programme. It has already achieved some success in containing inflation and halting the run on banks. Progress in the implementation of the programme brought about in April 2000 the first payment of a $2 billion support package by multilateral organizations. Support from IMF, in particular, is fundamental for Ecuador's being able to make progress in its external debt restructuring talks with foreign creditors.

The future performance of Ecuador under its new monetary framework is likely to influence other Latin American countries in their choice of foreign exchange regime. Some countries in Central America and the Caribbean, for instance, have been considering dollarization. These economies have stronger trade and finance links with the United States economy than Ecuador does. Many of them are already highly dollarized, and have kept a fixed exchange rate to the United States dollar for some years.

[d] There are different calculations of the seigniorage revenues for Ecuador: the low-end estimates are about $20 million annually, or about 0.1 per cent of GDP.

improved the sector's competitiveness vis-à-vis imported manufactures. By the end of 1999, signs of a broadening recovery were present as manufacturing stopped its decline and resumed growth. Nonetheless, the persistence of weak economic conditions, the decreased demand in Brazil, and the devaluation of the real had negative impacts on the country's regional trading partners. GDP contracted in Argentina and Uruguay.

Economic performance was rather poor in other South American countries as well. Chile, which had been growing uninterruptedly since 1984, saw its GDP contract by 1 per cent in 1999. Recession was particularly acute in Ecuador owing to the severe external shocks in 1998 that had affected the already fragile financial sector and provoked a banking crisis (see box III.4). In Colombia and Venezuela, domestic political difficulties exacerbated economic problems owing to the flight of capital and delays in investment.

In contrast, economic performance in the northern part of the region was, in general, more positive. In Mexico, which grew faster than anticipated, growth accelerated at the end of the year with all economic sectors benefiting from the surge in domestic demand. During 1999, Mexico continued to take advantage of its increasing integration with the United States and the strength of that country's economy. The latter also had a positive influence in most of the Caribbean and Central America. The majority of the economies in this area registered moderate-to-strong growth in 1999. However, Jamaica continued its recession, while Honduras was still coming to grips with the aftermath of hurricane Mitch.

Decreasing economic growth in many countries in the region was reflected in increasing unemployment. Urban unemployment increased especially in Chile, Colombia, Ecuador and Venezuela, but also significantly in Argentina and Uruguay, while it remained well above 10 per cent in countries such as Jamaica, Panama and Trinidad and Tobago.

At the regional level, inflation reached an annual average rate of 7.5 per cent in 1999—the lowest in decades (see table A.10). Except for a few countries, inflation fell as the price-dampening effect of weaker domestic demand dominated the cost-push pressures emanating from depreciating exchange rates. In Brazil in particular, in spite of an annual average devaluation of the currency of over 50 per cent, inflation remained within the target range of 6 to 10 per cent established by the authorities.[27] The Brazilian experience showcases the transformation that has taken place in the region. Most countries eliminated the indexation practices and inertial inflation that were typical of the region, thus breaking down expectations that inflation in the past would lead to accelerating inflation in the future. Other reforms, including increased trade openness, also contributed to lowering inflation in the region. At the end of 1999, inflationary pressures appeared in some countries, and with the expected economic recovery, a small increase in average inflation is expected in 2000. Accordingly, central banks are likely to tighten their monetary policy somewhat. Chile and Colombia, for instance, started to increase interest rates in early 2000 to offset the monetary stimulus of 1999. In Brazil, however, interest rates were reduced in the first quarter of 2000 and are expected to be brought down further from their current high levels by the end of 2000 in order to support the economic recovery and to reduce the cost of financing the public debt.

[27] A target of 8 per cent was adopted for 1999, but with bands: an inner or narrow band of +1/-1 percentage point and an outer or wider band of +2/-2 percentage points. Surpassing the inner band would trigger informal consultations with IMF while exceeding the outer band would require revisions of the Brazilian programme with the Fund (Brazil, Memorandum of Economic Policies and Technical Memorandum of Understanding, 12 November 1999 (http://www.imf.org.external/np/loi/1999/1112.99.htm)).

The region's trade deficit fell owing to the sharp reduction in imports, especially in countries in recession. Despite the devaluation of some currencies, exports revenues performed poorly in 1999 owing to lower prices, weak international demand, and the reduction of intraregional trade in South America. In Mexico and a few other countries, however, exports—particularly manufactures—performed well. Imports were severely curtailed in several countries and, as a result, the current-account deficit declined from 4.5 per cent of the regional GDP in 1998 to about 3 per cent in 1999.

The region suffered a sharp reduction of private lending and portfolio investment in 1999. Following the Brazilian crisis early in the year, access to international capital markets was restored relatively quickly for some countries but at higher costs, as spreads for Latin American sovereign bonds increased significantly (see chap. II). FDI, however, was strong in 1999 owing mainly to privatization and foreign acquisitions of local companies. This inflow of less volatile capital provided support to the region's balance of payments and may help to solidify the foundations for future growth.

After the difficulties of the past two years, prospects for the main Latin American countries in 2000 are positive, with countries such as Brazil, Chile and Mexico growing in the range of 4-6 per cent. Argentina, Colombia and Venezuela are also back on the growth track but their recovery is expected to be slower. The region's GDP is expected to grow close to 4 per cent in 2000 and at a slightly higher rate in 2001.

Stronger and more balanced growth in the international economy is likely to stimulate Latin American exports. The upswing in economic activity in the Asian economies in particular is expected to raise the price of some Latin American commodity exports. On the other hand, if the United States economy slows down towards the end of 2000, exports of manufactures by Mexico and other Central American and Caribbean countries will be adversely affected.

International capital markets are also expected to recover further, improving credit conditions for the region. Mexico's international credit rating was upgraded in early 2000. This is likely to contribute to narrowing bond spreads for other Latin American countries, as high-return markets, such as Argentina and Brazil, again become destinations for funds allocated to investments in emerging markets. As confidence returns, investment is expected to rebound from the low levels of 1999, especially in several countries of South America. Some projects have already been announced in sectors such as mining, energy, transport infrastructure and telecommunications. In the case of Mexico, FDI is likely to increase in the short-to-medium term owing to the free trade agreement signed with EU, which will come into force in July 2000.

In general, however, domestic demand in Latin America is expected to pick up slowly, as in several countries it remains depressed by the credit squeeze and the high level of unemployment. Moreover, fiscal retrenchment is likely to constrain the pace of recovery of some Latin American economies, such as Argentina and Colombia, in 2000. For some countries, weak and/or troubled domestic financial markets are likely to be a major obstacle to faster growth. This is the case for Colombia, Ecuador, Jamaica, Peru and Venezuela, among others. Another source of vulnerability lies in the high current-account deficits and external indebtedness of several countries. In particular, Ecuador after its default on Brady bonds and Eurobonds (see chap. II) needs to restructure its external debt as a preliminary to regaining access to foreign capital.

A number of risks remain. Significant hikes in global interest rates and instability in the international economic environment would adversely affect the nascent recovery in the region, given its vulnerability to such factors. On the domestic front, political uncertainties, unresolved internal conflicts and civic unrest have returned as potential impediments to growth in a number of countries. These problems are aggravated by the income inequality, unemployment and poverty that growth itself could alleviate.

PART TWO

ESCAPING THE POVERTY TRAP

IV THE POVERTY TRAP: EVIDENCE AND ANALYSIS

History shows that development can happen. Over the last 200 years, an increasing number of countries have achieved a substantial boost to their living standards. The latest testimony to the fact that development is possible has been given over the last half-century by a number of developing countries. East Asia in particular has developed faster than any other region in world history, doubling gross domestic product (GDP) per capita within a generation or less. Yet while some countries have seen enormous progress, a large number of countries have seen only small improvements in living standards and some have even regressed, particularly during the 1970s and 1980s. Many developing countries seem trapped at a low level of income.

Developing countries at a low level of income have been a recurrent concern of the United Nations from its beginnings. It has recognized the existence of a group of developing countries that are the poorest and the weakest and face the largest obstacles to development in terms of their economic, institutional, technological and human resources. In 1969, the General Assembly adopted a resolution affirming the need to alleviate the problems of the least developed among the developing countries with a view to enabling them to draw full benefits from the Second United Nations Development Decade.[1] In 1971, the Assembly approved a list of 25 least developed countries;[2] currently the list consists of 48 countries.

The external economic environment plays a critical role in the development success of the least developed countries and other low-income countries, particularly since they are generally more vulnerable to external shocks. Recognizing this, the international community has made special efforts to improve the external environment for such countries, for example, by providing trade preference, priority in the allocation of official development assistance (ODA) and, most recently, a special programme for debt relief. Such resources must continue, but it is apparent that they must be complemented by action to address key domestic constraints on development. Some generic policy issues have been addressed in previous editions of the *Survey*.[3] Part two of *World Economic and Social Survey, 2000* will review some of the domestic structural obstacles to development faced by the least developed countries, although it is not intended to be limited to those countries. It will examine a number of issues that such countries need to address in order to start a period of rapid and sustained growth from a low level of GDP per capita so that living standards will markedly increase over a relatively short period of time.

1 See General Assembly resolution 2564 (XXIV) of 13 December 1969.

2 See General Assembly resolution 2768 (XXVI) of 18 November 1971.

3 See, for example, *World Economic and Social Survey, 1996* (United Nations publication, Sales No. E.96.II.C.1 and corrigendum) for a discussion of investment issues, *World Economic and Social Survey, 1997* (United Nations publication, Sales No. E.97.II.C.1 and corrigenda) for a discussion of fiscal policy questions and *World Economic and Social Survey, 1999* (United Nations publication, Sales No. E.99.II.C.1) for an examination of issues pertaining to the development of the domestic financial sector.

Different obstacles to development have been highlighted over the years. For example, in the 1950s and 1960s they were export pessimism, poverty traps and market failures. The 1980s focused on poor economic policies and a constraining external international environment (for example, unsustainable debt and low commodity prices). In the 1990s, concepts from the 1950s, such as the concept of poverty traps and that of externalities, re-emerged and were put in a new light, partly as a result of theoretical developments. During the last five decades or so, development strategies have also changed, moving from government-led import-substituting industrialization in the 1950s to the provision of basic needs in the 1970s and to the market-led approach of the "Washington consensus" of the 1980s. During the 1990s, increasing emphasis was put on institutions, market failures and the functions of Governments in the development process.[4] The following chapters will look at a number of these factors and highlight their role in the transformation of a low-income developing country to a middle- or high-income country.

The conditions favourable to development need to be created domestically. The incentives for the development of these conditions and the benefits derived from creating them can be substantially affected, either positively or negatively, by exposure to international markets, external assistance and access to foreign technology, as will be highlighted below. In chapter VI, for example, the effects of rising exports on the demand for an educated and skilled labour force are emphasized, while in chapter VII the role of international technology transfer is discussed. On the other hand, a period of rapid economic growth can easily be disrupted by external circumstances, such as a fall in the terms of trade or a balance-of-payments crisis. The extent to which a country is able to withstand an unfavourable external environment, particularly an externally induced crisis, or benefit from the opportunities of international markets, depends partly on domestic conditions, notably its human capital and institutions.

GROWTH EXPERIENCE OVER THE PAST 50 YEARS

During the 1950s and 1960s, many developing countries attained relatively high rates of economic growth. This period has been described as the "golden age", as both the developed and the developing countries reached rates of growth unparalleled in history. In nearly all regions of the world, GDP per capita grew three to five times faster between 1950 and 1973 than in the period 1870-1913, which previously had been the period with fastest economic growth. Between 1950 and 1973, all major regions of the world enjoyed annual growth rates of per capita GDP of 2 per cent or more and Asia and Europe achieved an annual growth rate of more than 3.5 per cent. After 1973, growth in the developed countries slowed down, but the growth in the developing countries started to slow down only at the end of the 1970s, with the exception of many countries in East Asia where growth rates were maintained or even increased.

The 1980s, which were characterized in the developed countries by slow growth and in the developing countries by declining terms of trade and the debt crisis, were a "lost decade" for development in many countries. Several

[4] See, for example, Joseph Stiglitz, "More instruments and broader goals: moving toward the post-Washington Consensus", *WIDER Annual Lectures,* No. 2 (Helsinki, United Nations University/World Institute for Development Economics Research (UNU/WIDER), January 1998).

indicators are testimony to this fact. Many countries suffered an end to a period of rapid growth at the end of the 1970s or in the early 1980s and have not been able to resume sustained rapid growth since. This was in particular the case for the overwhelming majority of countries in Africa, in Latin America and in West Asia. GDP per capita fell in these three regions by a total of 6 per cent, 3 per cent and 51 per cent, respectively, in the 1980s. (In contrast, GDP per capita in Eastern and Southern Asia grew by 65 per cent.) The only economies that maintained a per capita growth rate of 3 per cent or more on average without negative growth in per capita terms throughout the 1980s were China, Cyprus, India, Indonesia, Pakistan, Taiwan Province of China and Thailand. There is no economy that was able to sustain economic growth of GDP per capita at 3 per cent for each year throughout the 1980s. In addition, only a few economies either commenced or resumed in the 1980s a period of 12 years with an annual average growth of per capita GDP of 3 per cent or more without sustaining any decline in per capita GDP. They were Chile, Hong Kong Special Administrative Region (SAR) of China, India, Mauritius, the Republic of Korea and Viet Nam.

The growth record of the developing countries improved during the 1990s, as GDP per capita increased annually by 2.3 per cent, compared with 0.1 per cent in the 1980s. This was largely a result of the rise in GDP per capita in Latin America. GDP per capita fell again in Africa and West Asia in the 1990s, although in West Asia by a much smaller amount than in the 1980s. Eastern and Southern Asia enjoyed about the same increase in per capita GDP in the 1990s as in the 1980s.

The economic performance of several developing countries was interrupted by a number of financial crises that shook the global economy between the end of 1994 and 1998. These crises originated in countries that had achieved substantial increases in their living standards. Subsequently, they had an impact on other developing countries as well, through the effects on international trade and finance. For example, the number of least developed countries that had reached growth rates of GDP per capita of over 3 per cent fell in 1999 to 5 from 10 in 1997 (see table I.2). Yet, it appears that the impact of the financial crises in the 1990s was of shorter duration than the debt crisis in the 1980s. The number of developing countries that are forecast to grow at over 3 per cent is expected to increase from 21 in 1999 to 29 in 2000 (see table I.2). For the least developed countries, the number is expected to rise from five in 1999 to eight in 2000.

The growth experience of the last half-century shows that few economies sustained growth rates at high levels without interruption. Indeed, there is no developing country that has achieved an annual growth rate of GDP per capita of at least 3 per cent for each year for a period of 24 years, which is the number of years needed to double GDP per capita at such a growth rate. Some economies (Botswana and Singapore) doubled GDP per capita in a period as short as seven years.[5] However, this implies a double-digit growth rate, which can rarely be sustained for more than a few years. A more common growth path is one where a country doubles GDP per capita in 12 years by growing at 6 per cent in per capita terms on average. Doubling GDP per capita in 10-13 years was achieved by, for instance, Brazil (1965-1974), Indonesia (1968-1980), Mauritius (1984-1997), the Republic of Korea (1963-1974, 1975-1986 and 1987-1996) and Taiwan Province of China (1963-1972, 1973-1984 and 1985-1995).

5 A shorter period is possible but only in exceptional circumstances, such as the recovery of Kuwait after the Gulf war or the situation in Equatorial Guinea after the commencement of oil production in the 1990s. In the case of Kuwait, GDP per capita doubled between 1991 and 1993, after it had fallen by 59 per cent between 1989 and 1991.

For the majority of countries, growth is a very slow or even elusive process. In fact, out of the 95 developing countries monitored by the Department of Economic and Social Affairs of the United Nations Secretariat, 28 suffered a decline in GDP per capita between 1964 and 1999 and in an additional 46 countries GDP per capita increased by less than 100 per cent over this period (GDP per capita doubles in 35 years if it grows at 2 per cent annually) (see table IV.1). Thus, a total of 74 countries, which amounts to 78 per cent, were not able to double GDP per capita over a 35-year period. Moreover, 39 of these 74 had a GDP per capita below $1,000 (in 1995 dollars) in 1999 and 38 of these 39 had been in the same situation in 1964. Thus, a large number of countries were poor and have remained poor. This suggests that they seem to be stuck in a poverty trap.

The question then arises how some countries have managed to escape this trap while others are still in it. The present *Survey* will discuss some of the elements that have played a role. A certain set of conditions that were in place and thresholds that had been reached can be identified for most of the countries that commenced a period of rapid and sustained growth. However, there cannot be one single blueprint for what these conditions were. Table IV.2 illustrates the fact that the initial conditions varied markedly. For example, GDP per capita ranged from $134 to $3,513, life expectancy from 46 to 71 years and years of schooling from 1.3 to 6.4. The variation depended on specific circumstances. Economies poor in mineral resources had to rely on agriculture and manufacturing for rapid economic growth and this was largely impossible without reaching certain levels of educational attainment and technological capabilities. On the other hand, in countries rich in mineral resources, GDP often grew at high rates for some years even if the educational attainment and life expectancy were low and infrastructure was poor. Revenues from mineral exports created opportunities but only a few countries have been able to grasp them. Many mineral exporters ultimately suffered from low growth rates,

Table IV.1.
FREQUENCIES OF AVERAGE ANNUAL GROWTH OF GDP PER CAPITA AMONG DEVELOPING COUNTRIES, 1965-1999

	Number of countries monitored	Average annual growth of GDP per capita (number of countries)				
		< 0	0-0.99	1-1.99	2-2.99	3+
Developing countries	95	28	26	20	7	14
of which:						
Latin America	24	3	7	10	4	0
Africa	38	17	14	3	0	4
Eastern and Southern Asia	18	1	3	4	1	9
West Asia	15	7	2	3	2	1
Memorandum items:						
Least developed countries	40[a]	27	6	3	2	1
Sub-Saharan Africa	31	16	11	2	0	2

Source: UN/DESA.

[a] For Eritrea, which became independent in 1993, no growth rate could be calculated for 1965-1999.

Table IV.2.
INITIAL CONDITIONS IN DEVELOPING COUNTRIES THAT HAVE ACHIEVED SUSTAINED RAPID GROWTH

Country	Period of rapid growth[b]	Initial conditions[a] GDP per capita[c]	Life expectancy[d]	Years of schooling[e]	Telephones per 1,000 persons	Institutional quality[f]
Botswana	1966-1991	525	50.1	1.3	3.5	7.0
Chile	1984-1998	2 754	70.6	6.4	58.8	6.3
China	1977-1989	134	65.3	..	1.9	5.7
India	1980-	241	53.9	2.7	4.0	5.8
Indonesia	1968-1997	297	46.0	2.3	1.6	3.7
Malaysia	1961-1974[g]	1 388	55.7	2.3	9.8	6.9
Mauritius	1984-	1 968	66.7	4.6	53.5	..
Republic of Korea	1963-1997	1 171	55.2	4.4	6.3	6.4
Singapore	1965-1997	3 513	66.9	3.3	46.3	8.6
Taiwan Province of China	1963-	1 423	66.1	3.8	11.2	8.2
Thailand	1965-1996	589	55.3	3.2	2.5	6.3
Viet Nam	1986-	184	60.6	..	..	5.0

Source: UN/DESA, based on Robert J. Barro and Jong-Wha Lee, "International comparisons of educational attainment", *NBER Working Paper,* No. 4349 (Cambridge, Massachusetts, National Bureau of Economic Research, 1993); David Canning, "A database of world infrastructure stocks, 1950-95", *Policy Research Working Paper,* No. 1929 (Washington, D. C., World Bank, June 1998); Council for Economic Planning and Development, *Taiwan Statistical Data Book 1999* (Taipei, Council for Economic Planning and Development, 1999); William Easterly and Ross Levine, "Africa's growth tragedy: policies and ethnic divisions", mimeo (Washington, D. C., World Bank, April 1996); and United Nations, *World Population Prospects: The 1998 Revision, vol. I, Comprehensive Tables* (United Nations publication, Sales No. E.99.XIII.9).

[a] For year closest to start of period of rapid growth.
[b] A period of at least 12 years of 3 per cent growth of GDP per capita on average without any year with negative growth.
[c] GDP per capita in beginning of growth period in 1995 United States dollars.
[d] For five-year period, if first year of rapid growth period falls within this period. For India, Singapore and Thailand, an average of adjacent periods is taken. Figure for Taiwan Province of China is average of male and female life expectancy for 1963.
[e] Average years of schooling for 1960, 1965, 1970, 1975, 1980 or 1985, depending on which year is closest to start of rapid growth period.
[f] Average of government repudiation of contracts, risk of expropriation, rule of law and bureaucratic quality over the 1980s. A high index number indicates higher institutional quality.
[g] Malaysia's other periods of rapid growth were 1976-1984 and 1988-1997.

appreciation of the real exchange rate ("Dutch disease"), worsening income distributions and corruption.[6] The higher the educational attainment and the better the infrastructure and institutions, the more likely it is these problems are avoided.[7] A mineral-exporting country can diversify into, for example, manufacturing, if a certain level of educational attainment is reached and infrastructure is built. Many developing countries received large foreign exchange earnings from exports during the commodity boom of the 1970s, but did not translate them into a more diversified economy. This left them vulnerable to declines in commodity prices as the experience of the 1980s has shown.

To give one positive example, the initial conditions in Botswana were rather poor when it became independent in 1966. There were no tarred roads in the country except for a few kilometres in towns. There were only nine secondary schools and only two offered the full five-year course, about 100 people with a secondary school diploma and about 40 people with a university degree.[8] The proportion of people with higher education per capita was actually not small compared with that of other countries but the absolute number was very small. A small country needs a relatively large number of educated civil servants because of economies of scale in the running of a country. In the case of Botswana, the pickings were slim. Fortunately, the leadership and the institu-

[6] See, for example, Edward E. Leamer and others, "Does natural resource abundance increase Latin American income inequality?", *Journal of Development Economics,* vol. 59, No. 1 (June 1999), pp. 3-42; Carlos Leite and Jens Weidmann, "Does mother nature corrupt? natural resources, corruption, and economic growth", *IMF Working Paper,* No. WP/99/85 (Washington, D. C., IMF, July 1999); and Jeffrey D. Sachs and Andrew M. Warner, "Sources of slow growth in African economies", *Journal of African Economies,* vol. 6, No. 3 (October 1997), pp. 335-376.

[7] See, for example, United Nations Conference on Trade and Development (UNCTAD), *Trade and Development Report, 1996* (United Nations publication, Sales No. E.96.II.D.6), part two, chapter II, annex; and Adrian Wood and Kersti Berge, "Exporting manufactures: human resources, natural resources and trade policy", *The Journal of Development Studies,* vol. 34, No. 1 (October 1997), pp. 35-59.

[8] See Charles Harvey and Stephen R. Lewis, Jr., *Policy Choice and Development Performance in Botswana* (New York, St. Martin's Press, 1990), pp. 18-23.

tions were of high quality (see, table IV.2). Thus, Botswana was able to take advantage of two fortuitous events: the discovery of diamonds in 1967 and the entry of the United Kingdom of Great Britain and Northern Ireland (a major export market for beef) into the European Union (EU) in 1973, which raised the price for the beef that Botswana exported.[9] Export revenues were used to expand infrastructure and educational attainment, improve health care and diversify production beyond beef and diamonds. Thus, the quality of the leadership and the institutions, including the democratic ones, contributed to the fact that the export revenues were well spent.

As the case of Botswana shows, institutions, including the political system, are crucial in influencing who appropriates an economic surplus and how it is spent. For example, a more equal distribution of land and income, as will be discussed in chapter V, results in a larger share of the income gains being received by peasants. This reduces capital flight and the imports of luxury goods and has positive effects on the private expenditures on education (see chap. VI) and on the demand for locally produced goods and services, thus stimulating development.

THE DEVELOPMENT OF DEVELOPMENT ECONOMICS

The second half of the twentieth century witnessed vast transformations among the developing countries. Many of them became independent from their colonial rulers, mostly in the first two decades after the Second World War. Independence brought new hope and vigour to the development efforts of these countries. Yet, the task was daunting.

In the 1950s and 1960s, the growth of GDP per capita was considered the main objective of development. It was thought that economic growth would, at least at some point, benefit everybody (by "trickling down"), the alleviation of poverty not being, in most cases, a direct objective. But growth would not come automatically. The early development economists regarded the standard economic theories as invalid for the situation that prevailed in the developing world. In their view, the developing economies did not function as smoothly as the developed countries but suffered from rigidities (for example, age-old institutions), shortages (for example, of entrepreneurs and finance), surpluses (for example, of rural labour), smallness (which made it hard to benefit from economies of scale) and absent or failing markets.

To overcome the vicious circle of poverty and the structural constraints on development, a deliberate big investment push in the industrial sector—coordinated, planned and instigated by an active State—was generally regarded as imperative. For example, the development of the iron industry was hindered because the market for iron was too small in poor countries, and the average costs for iron production is much lower at higher volumes (in other words, economies of scale are large). Moreover, industries that used iron would not develop because iron was too expensive (in other words, forward linkages were non-existent). It was felt that if the Government created both an iron industry and an iron-using industry, such as railroads, the dilemma (which economists refer to as a coordination failure) would be solved. In addition, cheaper iron and railroad transportation would also benefit industries other than the targeted ones (in other words, the externalities would be large).

[9] See Harvey and Lewis, op. cit., pp. 5-10.

The accumulation of physical capital, the construction of infrastructure and industrialization were seen as important instruments, partly because it was expected that the industrial sector would be able to employ the disguised unemployed from the agricultural sector (see chap. V). Government intervention, planning and public enterprises were expected to correct market failures, economize on scarce entrepreneurial talent, overcome large indivisibilities, realize economies of scale, induce positive externalities and linkages within and between sectors and increase the power of the State over the "commanding heights" of the economy. This development strategy was often combined with or a result of import-substitution, which was deemed necessary because of the pessimism that prevailed in the 1950s with regard to the prospects for exports of primary commodities ("export pessimism"), the experience of the 1930s being fresh in the memory of policy makers. Import-substituting industrialization was the dominant development strategy in the 1950s and 1960s; as Jawaharlal Nehru, the first Prime Minister of India, put it: "No modern nation can exist without certain essential articles which can be produced only by big industry. Not to produce these is to rely on imports from abroad and thus to be subservient to the economy of foreign countries."[10]

The optimism regarding the abilities of the Government to bring about development resulted from the successful planning of the war economies in countries like the United Kingdom and the United States of America; the Keynesian revolution which in the 1950s was in full swing; and the apparent success of centrally planned development in the Union of Soviet Socialist Republics (U.S.S.R.). As Keynes argued that a capitalist economy could be in an equilibrium with unemployment, the development economists argued that a developing country could be in a low-income equilibrium or poverty trap. In both cases, Government could provide the escape route. Moreover, economists had created a tool chest, with, for example, input-output analysis and simple growth models, that Governments would be able to utilize to devise policy measures that could be used to actually start development.

Starting at the end of the 1960s, increasingly doubts were raised about the effectiveness of a Government-led industrialization strategy, but the definite death knell came only in the early 1980s. This was triggered primarily by two events: slower economic growth, which affected almost the whole world after the first rise in oil prices of 1973/74, and the increasing acceptance of monetarism to combat high inflation. At the end of the 1970s and the beginning of the 1980s, Governments in a number of developed countries put the monetarists' ideas into practice and tightened the money supply. This resulted in sharply higher interest rates and contributed to a recession in many developed countries, yet inflation did slow down and more sustainable growth was eventually achieved. However, the higher interest rates and the recession in the developed countries in the early 1980s, coupled with falling non-oil commodity prices, laid the foundations for severe balance-of-payments problems, the debt crisis and a decline in economic performance in many developing countries in the 1980s.

The need for external finance (at a time when lending by commercial banks had decreased) resulted in increased lending by the Bretton Woods institutions. This was conditioned by policy prescriptions that generally focused on expanding the role of markets and reducing the role of Governments in economies.

[10] See Anne O. Krueger, "Policy lessons from the development experience since the Second World War", in *Handbook of Development Economics*, vol. 3B, Jere Behrman and T.N. Srinivasan, eds. (Amsterdam, Elsevier/North-Holland, 1995), pp. 2,501-2,502.

The convergence of policies that were recommended in the 1980s became known as the "Washington consensus". By this point, the ideological pendulum had swung to the other extreme: if in the 1950s it was thought that Governments could do everything, by the 1980s it was believed they could do hardly anything. This tendency towards a larger reliance on markets was further encouraged by the breakdown of central planning in Eastern Europe and the USSR, which started in 1989.

It became also increasingly clear in the 1980s that the export pessimism of earlier times had been unfounded, at least for individual countries, as several developing countries were able to raise their standard of living by rapidly expanding exports of manufactures that, over time, were of increasing technological sophistication. Export-led development became a more widely accepted development strategy. It became increasingly apparent that sustained rapid growth has to rely almost always on exports, this being particularly the case for small countries.

Without the convergence's ever having become complete, some of the limitations of the Washington consensus came more clearly to the fore in the 1990s. The simple (rhetorical) version of the Washington consensus asserted that economic growth would promptly follow stabilization, liberalization and privatization, but this was rarely the case in African countries and economies in transition. It became increasingly clear that macroeconomic stability was only a necessary condition for economic growth and not a sufficient condition.[11] These disappointing results have contributed to a new phase in the views of development economists and policy makers.

In the meantime, a parallel, and partly related, change occurred within the economic profession. Economic theory had become increasingly formal and mathematical over the previous few decades and the writings of the development economists of the 1940s and 1950s, which were more verbal, were often ignored. By 1980, most ideas of the 1940s and 1950s, such as those concerning externalities and poverty traps, had been forgotten, "essentially because the founders of development economics failed to make their points with sufficient analytical clarity to communicate their essence to other economists, and perhaps even to each other".[12] One reason for this failure was that these concepts were difficult, mathematically speaking, to incorporate into the then dominant economic theory, which assumed an economy in which everything was perfect: for example, no firm had market power (perfect competition), every participant had the same complete information (perfect and symmetric information) and average costs were constant (no economies of scale) and independent of the level of output and of the activities of other firms (no externalities).

While development practice was increasing its reliance on markets in the 1980s, theoretical developments were pointing to the deficiencies of this approach. Economists, starting in the 1970s, were increasingly incorporating into their models market power, asymmetric information and economies of scale—phenomena that make markets work less than optimally. In the 1990s, these two strands—development practice and theory—caught up with each other. In a way, the debate about development of 50 years ago is being revisited with more powerful arguments. The concepts of externalities, economies of scale, poverty traps and strategic complementarities between industries, among others, which originated in the 1950s, are again being used to explain development experience and to guide policy.

[11] The importance of macroeconomic stability was discussed in *World Economic and Social Survey, 1995* (United Nations publication, Sales No. E.95.II.C.1), part two.

[12] See, for example, Paul Krugman, *Development, Geography, and Economic Theory* (Cambridge, Massachusetts, The MIT Press, 1995), p. 7.

POVERTY TRAPS

One of the ideas that has resurfaced is that of the poverty trap. The concept of poverty traps, and related concepts such as those of vicious circles (of poverty) and cumulative and circular causation, took centre stage in many of the writings of the development economists of the 1950s. Two clear-cut examples are from Ragnar Nurkse: "(A) poor man may not have enough to eat; being under-fed, his health may be weak; being physically weak, his working capacity is low, which means that he is poor, which in turn means that he will not have enough to eat; and so on. … Secondly, the inducement to invest may be low because of the small buying power of the people, which is due to their small income, which again is due to low productivity. The low productivity, however, is a result of the small amount of capital used in production, which in its turn may be caused at least partly by the small inducement to invest."[13]

Poverty traps have recently regained attention in the academic literature,[14] partly because standard economic growth theory cannot easily explain the divergent growth experiences of the last half-century. This theory argues that, because more capital is used per worker in rich countries, the productivity of additional capital should be lower than in poor countries where less capital is used per worker (that is to say, where the marginal productivity of capital is decreasing). Investment in poor countries should be therefore more productive and should yield a higher growth rate than in rich countries. As a consequence, the difference in GDP per capita between rich and poor countries should become smaller over time. This has been the case among the developed countries themselves, where the gap in GDP per capita between the United States and Europe, and between Western Europe and Southern Europe, has become smaller since the end of the Second World War. This has not been the case for the developing countries, with the exception of a few economies such as Hong Kong SAR, the Republic of Korea, Singapore and Taiwan Province of China; to the contrary, the gap in GDP per capita between rich and poor countries has widened over the last half-century.

The old and new writings of development economists have identified a number of causes for poverty traps. Among the most frequently mentioned are demand spillovers, externalities related to human capital and technology, and the persistence of suboptimal institutions.

The first example of a poverty trap is a situation where demand spillovers are important as a result of economies of scale. A typical case concerns the iron industry and the railroads (discussed above). In both sectors, profitability is dependent on output levels (and therefore on the level of demand) because average costs decrease when output expands, in other words, they are subject to economies of scale. Each industry will never emerge by itself: the economy is stuck in a no-industry trap as a result of the complementarity between the iron and railroad industries. If the investments in the iron and railroad industries are coordinated and both expand at the same time, demand for each other's output will make them profitable.

Chapter V discusses the case where the demand spillover that stimulates output in other sectors comes from agriculture. If the agricultural sector produces with no economies of scale—in other words, if the average costs per unit of output are independent of the level of output—but manufacturing and

13 See Ragnar Nurkse, *Problems of Capital Formation in Underdeveloped Countries* (New York, Oxford University Press, 1953), pp. 4-5.

14 For an overview, see Andrés Rodríguez-Clare, "Positive feedback mechanisms in economic development: a review of recent contributions", in *Development Strategy and Management of the Market Economy,* vol. II, István P. Székely and Richard Sabot, eds. (New York, Clarendon Press on behalf of the United Nations, 1997), pp. 91-145.

services are subject to economies of scale, the economy can end up in a poverty trap in the case where the income of farmers is too low to generate enough demand for manufactured goods and services. However, if, for example, technological progress in agriculture or land reform raises the incomes of farmers, this can provide the necessary demand boost to manufacturing. Thus, manufacturing and services can expand output, resulting in a fall in average costs and an increase in profitability. Moreover, the availability of manufactured goods and services provides incentives to farmers to generate more income. This raises the possibility of an agriculture-led development strategy, which has often been ignored.

Raising productivity in agriculture is also important because it can transform another vicious circle into a virtuous circle. One of the most important vicious circles that can exist in a poor country consists in the negative effect of chronically undernourished people on productivity. Raising food output and lowering food prices contributes to better nutrition throughout the economy and can provide an important stimulus to the escape from a poverty trap (see chap. V).

A second major cause of a poverty trap is the existence of economies of scale and externalities related to human capital, research and development and technology. Education and research and development yield large benefits to people other than the ones educated or paying for the research. Because the benefits to society are larger than the private benefits, not enough people become educated, not enough technology is generated and not enough research is embarked upon. This in itself can generate a poverty trap, which can be reinforced if the returns to education or research for an individual are dependent on the educational attainment or research efforts of others.[15] There are fewer incentives for an individual to go to school in a poor country because there are fewer opportunities that reward education, that is to say, the private returns to education are particularly low. Yet, growth will materialize only if educational attainment increases. Thus, enrolment rates are low because the country is poor and economic growth is slow because enrolment rates are low.[16] The result is a poverty trap.

Chapter VI emphasizes the fact that a certain level of educational attainment has to be reached before a significant improvement in living standards can be expected, which is consistent with the phenomenon of a poverty trap. Thus, economies as disparate as Scotland in the eighteenth century, and China, Japan, the Republic of Korea and Taiwan Province of China in the twentieth century, reached levels of educational attainment surpassing what one would expect, given their GDP per capita. This prepared them for the subsequent rise in GDP per capita. When economic growth took off, it also created a demand for education, transforming a vicious circle into a virtuous circle.

Similarly, a country needs to achieve certain levels of educational attainment and technological capabilities before technology can exert its full impact on growth. This is highlighted in chapters VI and VII. The rapidly expanding markets for products and services that use and produce information technology offer new opportunities. However, before they can be exploited, a number of conditions—regarding, for example, education and infrastructure—need to be in place. Moreover, there is evidence that a certain minimum threshold of investments in information technology need to be made before the benefits from these investments reveal themselves.

15 See, for example, Costas Azariadis and Allan Drazen, "Threshold externalities in economic development", *The Quarterly Journal of Economics,* vol. 105, No. 2 (May 1990), pp. 501-526.

16 See, for example, Richard B. Freeman and David L. Lindauer, "Why not Africa?", *NBER Working Paper,* No. 6942 (Cambridge, Massachusetts, National Bureau of Economic Research, (NBER), February 1999).

A number of chapters of the present *Survey* highlight the critical importance of education, whether in increasing the adoption of new technology in agriculture, enhancing technological capabilities and labour productivity or augmenting the linkages between agriculture and the rural non-agricultural sector.

A third reason for the creation of a poverty trap can be the presence of suboptimal institutions. Institutions are the formal and informal norms and rules of society that shape the environment within which the economy operates, and increasing attention is being paid to their critical role in the development process. Chapter VIII examines the characteristics that can result in institutions that hinder development but are difficult to change. Institutions have a high degree of complementarity among themselves so that it is frequently difficult to change one without creating implications for others. This makes the dynamics of institutional change complex and hard to predict. Many institutions also have considerable set-up costs. This implies that they are subject to economies of scale, and this in itself can be a cause of a poverty trap. Because they are hard to transform, suboptimal institutions, such as those that create poverty traps, may very well persist.

Chapter VIII argues that one requirement for changing institutions is greater participation. For example, an unequal distribution of land can be an obstacle to growth that is difficult to change; however, as discussed in chapter V, community involvement in land reforms has enhanced their success. If land reforms are complemented by policy reforms, they can provide a stimulus to growth because the combination may lead to higher productivity, political and social stability and a more equitable income distribution. This, in turn, can provide a boost to the demand for manufactured products and services. More equal income distributions also contribute to greater demand for and supply of education (see chap. VI).

Poverty traps imply that certain critical values need to be reached before growth becomes a self-sustaining process: in certain areas of development, countries have to surpass a threshold before sustained growth will commence. Countries may need to spend considerable effort over an extended period of time to reach these thresholds before they can reap the benefits. For example, farmers' incomes may need to reach a certain level before they generate enough demand for manufacturing goods and services to enable these other sectors to realize economies of scale and become profitable. Similarly, educational attainment has to reach a certain level before the externalities are large enough to have a significant impact on economic growth and the resulting expanded economic opportunities provide incentives to school enrolment. Equally, a country needs to acquire certain technological capabilities before it can benefit from the opportunities of a globalized economy. As a final example, more equal distributions of land and income are conducive to positive feedbacks between economic growth and the demand for manufactured goods and the demand for and supply of education. Several studies have indicated that high initial levels of inequality are detrimental to economic growth.[17]

This part of the *Survey* argues that it is possible even for countries that face seemingly insurmountable obstacles to escape the poverty trap and develop. Constraints do matter, but countries that face adverse conditions need to make a deliberate effort to surmount them and seize the opportunities that are offered. Several countries have done this, despite (or perhaps owing to the need

[17] See, for example, Nancy Birdsall and Juan Luis Londono, "Asset inequality matters: an assessment of the World Bank's approach to poverty reduction", *The American Economic Review,* vol. 87, No. 2 (May 1997), pp. 31-37.

to overcome) export pessimism, poverty traps, market failures, an adverse international environment, high transportation costs or a lack of natural resources. The Republic of Korea has succeeded, despite few natural resources and export pessimism; Chile is in the process of succeeding despite high transportation costs and dependence on primary commodities; Botswana is on its way to succeeding, despite little human capital; and Mauritius is also on its way, despite monoculturalism, cyclones, high unemployment, brain drain and high transportation costs. There are no absolute constraints on an escape from a poverty trap, but the process is neither automatic, nor quick nor easy. Overcoming the constraints and escaping a poverty trap usually take a long time. It took East Asia, for example, a number of decades to create some of the institutions, infrastructure and human capital that supported the rapid growth of the 1960s, but others were developed in a much shorter period of time through a broad and intense effort. In all cases, creating the necessary conditions for development requires, above all, a long-term national commitment and strong political leadership.

V AGRICULTURE AS AN ESCAPE FROM THE POVERTY TRAP

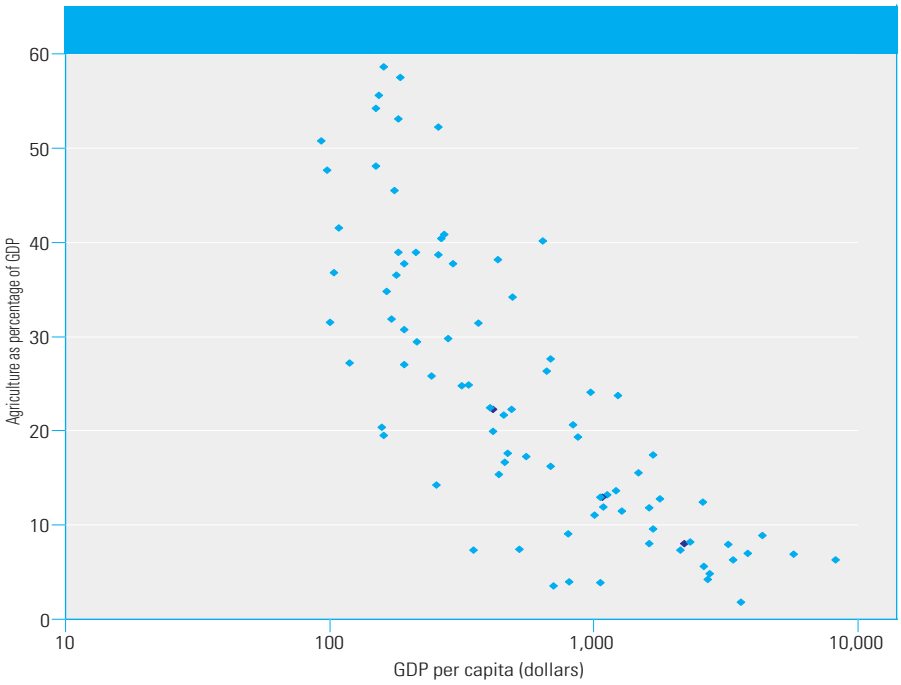
Development usually involves the transformation of an economy from one dominated by agriculture into one where other economic activities assume a greater role. Yet, whether agriculture plays a passive or an active role in the economy's transformation from a low to a high living standard is less clear. Many development economists have paid relatively little attention to agriculture—with some notable exceptions—despite the fact that some economists have argued that there has not been any industrial revolution that was not preceded (by 50 to 60 years) by an agricultural revolution, in other words, by a substantial increase in agricultural productivity. In many development strategies, ranging from import-substituting industrialization to export-led growth, agriculture has played only a supportive role or no role at all. In particular, the interactions between agriculture and other sectors have often been ignored and frequently little emphasis has been put on enhancing technological progress, on investing in agriculture and on exploring the possibility that agriculture can trigger development elsewhere. Policies have frequently displayed, either explicitly or implicitly, an urban bias, reflected in heavy taxation of agriculture, price controls on food, a lack of rural infrastructure, too little agricultural research and neglect in the provision of social services in rural areas. On the other hand, agriculture has played a large role during the development process in a number of countries, for example, China and Japan.

Agriculture is especially fundamental during the early phases of development because of the size of the agricultural sector, the extent of rural poverty and the primacy of food. In most developing countries, agriculture engages between 70 and 95 per cent of the labour force and accounts for 20-60 per cent of gross domestic product (GDP) (see figure V.1) and 10-90 per cent of merchandise exports.[1] A focus on agriculture is also imperative because poverty in most developing countries is concentrated in rural areas.

Agriculture can promote economic development through several channels: by increasing food production and lowering food prices; by improving nutrition and increasing labour productivity; by generating employment; by creating demand for manufactured goods and services; by providing labour and capital for the development of other sectors; and by earning foreign exchange. But the critical word is *can*. The question is thus how agriculture can stimulate development. The present chapter examines the factors determining the critical role that agriculture can play in the early phases of development. Specifically, this chapter will discuss the linkages between agriculture and the rural non-agricultural sector, the distribution of land, infrastructure and technological progress in agriculture.

1 For the least developed countries, these proportions were on average 72 per cent, 29 per cent and 15 per cent in 1997.

Figure V.1.
SIZE OF THE AGRICULTURAL SECTOR AND GDP PER CAPITA IN DEVELOPING COUNTRIES, 1996[a]



Source: UN/DESA, based on data of World Bank and national authorities.

[a] Excluding Hong Kong SAR and Singapore.

AGRICULTURE'S HISTORICALLY SECONDARY ROLE

In many development strategies, the agricultural sector is given a rather passive role. The central focus during the 1950s and 1960s was on industrialization; agriculture was to a large extent just a supporting activity that supplied the labour, resources and food needed in industry. It was possible for large numbers of workers to be taken away from agriculture and employed in industry without a resulting drop in food production. Agriculture could also be taxed to provide revenues that could be invested in industry.

The bias towards industry was partly based on the belief that agriculture was subject to low productivity and slow growth. The classical economists of the nineteenth century, such as Thomas Malthus and David Ricardo, argued that agriculture suffered from diminishing returns. Many economists since then have considered the prospects for technical progress in this sector to be dim, partly because of the limitations to technological transfers across ecological zones. For example, the international development strategies for the 1970s and the 1980s deemed the potential growth rate for agricultural output at half (or less than half) the potential growth rate of manufacturing output.[2]

The prospect of slow agricultural growth has also been provoked by Engel's law, which states that the share of income spent on food decreases when income increases. This ultimately limits the increase in the demand for food and thus the growth of output. Engel's law has been one of the few widely accepted empirical regularities in economics. Limited growth of demand has been an issue not only for food, but for all primary commodities. Export pes-

[2] See General Assembly resolution 2626, (XXV) of 24 October 1970 on the International Development Strategy for the Second United Nations Development Decade; and note by the Secretary-General on the International Development Strategy for the Third United Nations Development Decade (A/35/464) of 23 October 1980.

simism regarding primary commodities, which prevailed in the 1950s and 1960s, was a key cause of the bias towards industry. Economists were pessimistic during that period about the possibility of the expansion of exports of primary products because of the Depression of the 1930s when demand for and prices of primary commodities had been very low. In general, economists have argued that the income and price elasticities of primary commodities are low and that the demand for primary commodities is vulnerable to the invention of substitutes. To give two examples, synthetic rubber has replaced natural rubber to a large degree and fibre-optic cables are replacing copper wires.

The emphasis on industry was also based on the view that manufacturing produced more dynamic production linkages and could therefore better serve as an engine of growth for the whole economy. It was argued that agriculture did not generally use many inputs from other sectors, or provide a lot of inputs to other sectors, except in food processing and textiles, and that these two sectors would decline relative to other sectors when a country developed. Thus, Albert Hirschman, an influential development economist, wrote in the 1950s: "Agriculture certainly stands convicted on the count of its lack of direct stimulus to the setting up of new activities through linkage effects; the superiority of manufacturing in this respect is crushing."[3]

The potential for linkages in manufacturing is closely related to the argument that economies of scale are more prevalent in manufacturing. This is particularly the case in sectors that require large investments, such as the chemical and steel industries. Economies of scale are smaller in subsectors such as textiles and leather. Many economists have also argued that technical change originates from manufacturing industries and a large share of total research and development (R&D) expenditures is spent in the manufacturing sector. R&D spillovers thus originate to a large extent from the manufacturing sector, and capital goods sectors are particularly important in transmitting technical progress. Finally, the possibility for specialization and division of labour is greater within manufacturing than within other sectors of the economy.

In contrast, agriculture has few economies of scale inherently internal to the farm because land can be tilled with a hoe and with a tractor and plough and inputs such as land, labour, livestock, fertilizers, seeds and pesticides can be applied in small quantities (or rented). Economies of scale on larger farms can result from easier access to credit and from economies of scale that exist in processing, storage, distribution, irrigation or agricultural support services. Plantations, for example, usually arise (or survive) because of a combination of economies of scale in processing and transportation and the need to coordinate harvesting, processing and transportation owing to the perishable nature of the crop.

AGRICULTURE'S POTENTIAL MAJOR ROLE

During the last three decades, the assumptions underlying the bias against agriculture have increasingly been challenged. The gloomy expectations about agricultural productivity have been challenged in a major way by the green revolution. Although the term "green revolution" is associated with the increased use of chemical inputs and high-yielding seeds in developing countries since the 1960s, the essence of this process was applied earlier in countries such as Japan and the United States of America. Japan started to use improved rice

[3] See Albert Hirschman, *The Strategy of Economic Development* (New Haven, Connecticut, Yale University Press, 1958), pp. 109-110.

varieties in the late nineteenth century and the United States first developed maize hybrids in the 1920s. This, in combination with more fertilizers, led quickly to a large jump in output per acre of land in both countries.

The success of the green revolution in the 1960s and 1970s, particularly in South Asia, pointed to another misconception regarding agriculture. It was recognized in the 1950s and 1960s that the green revolution required an increased use of industrial inputs, such as chemical fertilizers, pesticides, irrigation tube wells and agricultural equipment. What was ignored was the generally much larger effect of the green revolution on the demand from farmers for consumption goods produced by other sectors. The size of these consumption linkages broached the possibility of an agricultural demand-led development strategy. In other words, agriculture can be a leader rather than a follower. This possibility has been emphasized increasingly since the 1970s.

An often-neglected externality of agriculture is the benefit to other sectors if food prices are low or decline. An increase in agricultural productivity that leads to higher food production and lower food prices has beneficial effects throughout the economy because it improves the nutritional status of people, allowing an increase in labour productivity, and leads to higher real wages. One economic historian estimated that 50 per cent of British economic growth beween 1790 and 1980 appears to have been accounted for by the better nutrition and increased human efficiency in transforming dietary energy into work output.[4] This has been recognized by some economists, but it received little emphasis when countries were designing and implementing their development strategies. The importance of the externality of food production and prices became very apparent in India in the early 1960s when there were a number of years of poor harvests, pushing up food prices and wages. This process was reversed only with the green revolution. The subsequent growth of the non-agricultural sectors was made possible partly by lower food prices.

The price of food is also central when policies focus on incentives for the production of tradables but ignore the fact that the cost of tradables is partly determined by the prices of food. The competitiveness of tradables can thus be improved by lowering food prices; but in many developing countries, particularly in Africa, food is non-tradable, largely because of high transportation costs. As a result, policies that attempt to enhance the incentives for tradable goods should not ignore non-tradables.

There are a number of advantages of a development strategy that emphasizes agriculture. Firstly, agriculture itself, and the construction of the infrastructure that agriculture needs to enhance its productivity (roads and irrigation), are very labour-intensive. They are even more labour-intensive than such manufacturing industries as textiles. Productivity increases in agriculture will thus lead to higher demand for labour, which will particularly benefit the poorest people in rural areas, namely, the landless. Secondly, higher agricultural productivity leads to higher living standards among poor farmers and more demand for goods and services that are also relatively labour-intensive. These two factors imply that an agriculture-led development strategy is an effective way to reduce poverty through employment creation. Finally, agriculture is less import-intensive than manufacturing and alleviates the foreign exchange constraint that many developing countries face.

[4] See Robert W. Fogel, "Economic growth, population theory, and physiology: the bearing of long-term processes on the making of economic policy", *The American Economic Review,* vol. 84, No. 3 (June 1994), pp. 387-388.

Linkages

If agriculture functions as an engine for development, linkages to other activities are the driving belts and perform the actual work. The larger these linkages, the bigger the effect. Evidence shows that an additional dollar of agricultural income in Asia leads on average to an additional $0.80 in total income, that is to say, the multiplier is 1.8. Until recently, multiplier estimates for Africa were usually lower—about 1.5.[5] As indicated above, the total effect (in Africa and Asia) is largely a result of consumption linkages, rather than production linkages. The production linkages are, in relative terms, stronger in Asia than in Africa because Asian agriculture is technologically more advanced and uses more inputs from other sectors, and processing of agricultural products is more prevalent. Potentially these linkages in Africa could be higher.

The size of the linkages depends on a number of factors. One of the most important determinants is income distribution and closely related to that is the distribution of land. Rich farmers spend a larger share of their income on imported goods or on goods that are "imported" from urban areas, thereby reducing the linkages to the rural non-agricultural sector (see below). Low-income farmers spend a much larger share of their income on locally produced goods and services, which are cheaper and of lower quality and thus more compatible with the income level and needs of the lower-income segments of the population. Moreover, large farms are generally more mechanized and less labour-intensive than small farms. This also reduces the linkages to other sectors because the inputs and machinery used by large farms are mostly imported. An agricultural demand-led development strategy will thus be unlikely if the income distribution is very unequal because the additional income generated within agriculture, for example, by an export boom or technological progress, will not translate into much demand for domestically produced manufactures and services. It has been argued, for instance, that the tobacco export boom in Colombia during the 1850s and 1860s failed to generate wider economic development because tobacco was cultivated on a few very large plantations; but the surge in coffee exports in Colombia between 1880 and 1915 stimulated industrialization because coffee was grown by a large number of peasants.[6]

The size of the linkages is also related to the extent and quality of infrastructure. Transportation and communication infrastructure has a positive effect on agricultural incomes because it reduces transaction costs and increases the availability of inputs to agriculture. In addition, higher incomes within agriculture translate into effective demand for goods and services produced by other sectors. Who benefits from this increased demand depends on the tradability of the goods and services produced, which is partly determined by infrastructure as well. However, the better the infrastructure, the higher the tradability of goods and the more likely an increase in agricultural incomes will translate into demand for goods produced elsewhere, for example, in urban areas. This could also mean that there is a triggering by demand of imports from abroad, which reduces the linkage effect. Demand is more likely to be satisfied by supply from elsewhere when there are local supply constraints or when demand doesn't match the supply of goods and services. Supply constraints are probably more pervasive in Africa than in Asia. There can thus be a contradictory (short-term) effect associated with the improvement of infrastructure.

5 See M.S.D. Bagachwa and Frances Stewart, "Rural industries and rural linkages in sub-Saharan Africa: a survey", in *Alternative Development Strategies in SubSaharan Africa,* Frances Stewart, Sanjaya Lall and Samuel Wangwe, eds. (London, MacMillan, 1992), pp. 145-183; Christopher L. Delgado, Jane Hopkins and Valerie A. Kelly, *Agricultural Growth Linkages in Sub-Saharan Africa* (Washington, D.C., International Food Policy Research Institute, 1998); and Food and Agriculture Organization of the United Nations (FAO), *The State of Food and Agriculture, 1998* (Rome, FAO, 1998), part III (Rural non-farm income in developing countries).

6 See Kevin M. Murphy, Andrei Schleifer and Robert Vishny, "Income distribution, market size, and industrialization", *The Quarterly Journal of Economics,* vol. 104, No. 3 (August 1989), pp. 537-564.

Better infrastructure, especially in rural areas, generally has a positive effect on agriculture and other activities because it enhances technology adoption and the degree of specialization among regions. This will raise incomes. The effect of higher incomes on the rural non-agricultural sector is higher if the demand for goods and services matches what is locally produced, if there are no supply constraints and if the non-tradability of goods and services is high. The more these conditions are met, the higher the linkages to the local community. In Africa (West Africa in particular), the proportion of goods and services that are considered non-tradable is high, partly owing to poor infrastructure.[7] As a result, an exogenous increase in agricultural incomes, as caused, for example, by the adoption of new technology or an improvement in the international price of an exported commodity, can have an important demand-led growth effect on the economy if there are no supply constraints. According to recent estimates that take account of the large non-tradable sector in Africa, a $1 increase in income from the production of tradables will generate approximately an additional $1 to $2 in income at the national level (that is to say, the multiplier is between 2 and 3).[8] This enhances the prospects for agricultural demand-led growth.

REDISTRIBUTIVE LAND REFORMS

To realize the full potential of the role agriculture can play in the transformation of an economy, agricultural productivity has to increase. Poor performance of agriculture has often been blamed on the bias against agriculture with regard to prices, taxes and interventions in production, consumption and marketing of outputs and inputs. As a result, reforms of the agricultural sector initially mainly focused on the liberalization of markets.

However, the aggregate supply response to changes in prices is very low in the short run in agriculture because the factors of production (land, labour, capital and technology) are largely fixed. Over the long run (as many as 10 to 20 years), agricultural output is more responsive to prices if and only if the factors of production are expanded or new technology is adopted and this is complemented by investments in education and infrastructure and access to credit, extension services and inputs.[9]

Land reform is an important means to increase agricultural productivity. The redistribution of land from landlords to farmers who own and operate the land has played a key function in transforming a traditional agricultural society into a developed economy, by increasing output through more intensive use of land and labour, by enhancing the demand linkages with other sectors and by stimulating rural non-agricultural activities. Programmes to redistribute land became unpopular during the 1980s, partly as a result of poor results and government interventions in markets that had proved unsustainable. Recently, interest in land reforms has re-emerged.[10]

The case for land redistribution

There are three main arguments in favour of the redistribution of land from large farms to owner-operated small farms.[11] The first argument is based on the evidence that small owner-operated farms are usually more productive. However, this argument is not straightforward. Average costs per unit of output

7 For example, Delgado, Hopkins and Kelly (op. cit., p. 85) consider coarse grains, *fonio*, tubers, some vegetables, some processed food and drinks and several manufactures non-tradable at the national level in the south-eastern and central groundnut basin in Senegal.

8 Delgado, Hopkins and Kelly, op. cit.

9 See, for example, Hans Binswanger, "The policy response of agriculture", in *Proceedings of the World Bank Annual Conference on Development Economics, 1989* (Washington, D. C., World Bank, 1989), pp. 231-58; Marian E. Bond, "Agricultural responses to prices in sub-Saharan African countries", *IMF Staff Papers,* vol. 30, No. 4 (December 1983), pp. 703-726; and Michael Lipton, "Limits of price policy for agriculture: which way for the World Bank", *Development Policy Review,* vol. 5, No. 2 (1987), pp. 197-215.

10 The present section is partly based on Henk-Jan Brinkman, "Redividing land can boost output", *Africa Recovery,* vol. 12, No. 3 (December 1998), pp. 14-15.

11 See Hans P. Binswanger and Klaus Deininger, "South African land policy: the legacy of history and current options", *World Development,* vol. 21, No. 9 (September 1993), pp. 1,451-1,475; Hans P. Binswanger, Klaus Deininger and Gershon Feder, "Power, distortions, revolt and reform in agricultural land relations", in *Handbook of Development Economics,* vol. 3B, Jere Behrman and T.N. Srinivasan, eds. (Amsterdam, Elsevier/North-Holland, 1995), pp. 2,659-2,772; Klaus Deininger and Hans P. Binswanger, "The evolution of the World Bank's land policy: principles, experience, and future challenges", *World Bank Research Observer,* vol. 14, No. 2 (August 1999), pp. 247-276; and Keijiro Otsuka, Hiroyuki Chuma and Yujiro Hayami, "Land and labor contracts in agrarian economies", *Journal of Economic Literature,* vol. 30, No. 4 (December 1992), pp. 1,965-2,018.

are generally not very different on small and large farms. In other words, economies of scale are generally immaterial at the farm level. That is because very few inputs are indivisible and have large fixed costs (which would cause average costs to decline when output is larger). Farm machinery might be an exception but it can be made divisible by renting rather than owning.

On the other hand, the costs of supervising workers increase with the size of the farm. These costs are particularly large in agriculture because tasks on farms are spatial and sequential in nature. This is one of the major reasons why family farms, where the operator is also the owner, are often the most productive, as family members have high incentives to work hard on the farms they operate. Family members are not paid by the hour (so that the costs of production do not increase when more labour is used) and often have low opportunity costs, for example, because of a lack of off-farm wage employment. Therefore, they are likely to work long hours. The combination of the lack of economies of scale, low supervision costs and high labour input on family farms establishes a negative relation between farm size and productivity. This pattern has been found in many parts of the world.

The empirical regularity of land productivity's being higher on smaller farms can be disturbed by imperfect markets, institutions and policies that favour large farms, or by economies of scale that exist in processing or agricultural support services, such as distribution, extension and storage (see box V.1). For example, it is often easier for large farms to obtain credit because they can use land as collateral. Moreover, countries all over the world have favoured large farms through subsidies, taxes and interventions in land markets, output and input markets, and labour markets, or in the public provision of services, such as transportation, extension and research. Such policies and institutions greatly increased the profitability of large farms in many countries, particularly in Eastern and Southern Africa. Large farms often occupy land of higher quality, have better access to credit and extension services and use more non-labour inputs, such as fertilizer, pesticides, high-yield seed varieties and irrigation. This is mainly a result of subsidies and institutions favouring large farms. In South Africa, for example, the profitability of large farms was aided by restrictions on tenancy, the elimination of African tenancy in the Land Act of 1913, the pass laws and subsidies for mechanization. Some have argued that discrimination against smallholders in several African countries has been the most severe in the world. As a corollary, output should increase when the policy bias against smallholders declines. This has been the case, for example, in Kenya and South Africa; the latter has reformed a number of markets since the 1980s, for instance, by reducing the subsidies on capital that favour large farmers.

The second argument in favour of land redistribution is based on equity considerations. Economists often argue that there is a trade-off between efficiency and equity; but, as the evidence on the productivity of small farms shows, this trade-off usually does not exist in the case of land redistribution. There is little dispute about the fairness of land redistribution, as the existing distribution of land is usually the result of violence, coercive actions and/or discriminatory policies. As the unequal distribution of land in many countries was often secured by violent means, it also has frequently led to long and violent strife. As a corollary, land redistribution can contribute to social and political stability, as has been the case in some Asian countries. Yet, land reforms that were

Box V.1.

THEORETICAL ARGUMENTS ON THE PRODUCTIVITY OF OWNERS AND TENANTS

The productivity advantage of small farms over large farms implies that it is more profitable for landlords to sell or to rent out land than to hire labour to work the land. The question arises whether farmers who rent the land are as productive as farmers who own the land. Theory suggests that, under certainty and if the work efforts of the tenant can be observed and enforced by the landlord without costs, the outputs of a fixed-rent tenant farmer, owner cultivator, or sharecropper should be the same. Yet, these circumstances are obviously unrealistic. If the work efforts cannot be enforced freely (and there is no uncertainty), a fixed-rent contract will yield higher incomes for landlord and tiller than sharecropping. This is the case because it is harder to motivate sharecroppers, as they receive only part of the additional output they produce if they work harder. If, on the other hand, enforcement costs are zero, there is uncertainty and the tiller is risk-averse (which is typical for a household that needs to ensure minimum subsistence), a share contract is the preferred choice of contract, even though incomes are lower than in the unrealistic perfect world. The reasons for this are that sharecropping will allow the tiller to share the risk (for example, of adverse weather) with the landlord and that it insures the landlord against rent default by tenants who are illiquid.

In the real world with its uncertainty, enforcement costs and imperfect credit markets (where landownership means easier access to credit), tenants and sharecroppers in particular have lower incentives to work hard, to purchase yield-enhancing inputs and to invest in land improvements, and will thus have lower outputs. Yet, these incentives are enhanced in a number of ways. Firstly, in close-knit communities where social relations are important and where the landlord is also a resident, enforcement costs are lower and yields are closer to first-best outcomes. (Moreover, where enforcement costs are lower but uncertainty exists, share tenancy is more desirable.) Secondly, imperfect credit markets, which landless farmers face, are partly alleviated by borrowing from landlords and cost-sharing of farmers' inputs with the landlord. Furthermore, the development of financial markets that enhance access to finance and insurance will lead to higher output (and a shift from share to fixed-rent tenancies because the finance and insurance can partly cover against risk).

Thus, tenant farmers, and sharecroppers in particular, in theory face lower yields. In practice, however, sharecropping is a very common and efficient solution to the complexities and imperfections of the real world. In effect, empirical studies show that the yields of sharecroppers are not significantly lower than those of owner cultivators or tenants (unless there are constraints - for example, legal ones - on tenancy arrangements).

The fact that the efficiency losses associated with tenancy and sharecropping are small or negligible establishes a case for land rental markets. It has been argued recently that the encouragement of a land rental market should be a higher priority than the creation of sales markets. Rental markets tend to be less affected than sales markets by credit market imperfections, have lower transaction costs and often also facilitate the transfer of knowledge. Imperfect credit and insurance markets are particularly a problem because they can lead to distress sales of land by smallholders in case of adverse weather or accidents and to a reversal in land concentration.

initiated only to calm or avoid social unrest or divert attention were often poorly designed, with insufficient attention to the needs and capabilities of, and structural constraints on, peasants. Moreover, the implementation of these reforms was often piecemeal and they were often abandoned after the immediate threat subsided.

Successful land reforms have occurred in Japan, the Republic of Korea and Taiwan Province of China. Ownership of large amounts of land was transferred in the late 1940s and the early 1950s from landlords (and the State) to smallholders. This contributed not only to socio-political stability but also to higher productivity and higher living standards in the agricultural sector, and higher demand for locally produced manufactured goods and services, thus stimulating development. Thus, land reforms made the income distribution more equal and augmented the size of the linkages between the different sectors. The fact that they also transformed social relations and power structures within the societies has had positive effects on the participation of communities and on development. Even in Latin America, where land reforms have been more limited, the results have been positive with regard to productivity and income distribution. These positive effects of land redistribution partially explain the positive relation between initial land and income distributions and subsequent economic growth across countries, which contradicts the traditional view that inequality was necessary for growth and that growth would eventually produce a more equal distribution of income.[12]

The redistribution of land from rich landlords to poor farmers reduces wealth and income inequality and alleviates poverty as it enhances the income-earning potential of poor people. For example, it has been shown that poor people who have access to land are more food-secure, as land provides an insurance against malnutrition. In addition, the credit access that is associated with landownership allows families to spend more on schooling and health care.

Thirdly, land redistribution is also undertaken for environmental reasons in countries where land overuse needs to be reduced, as in the communal areas of Zimbabwe. Environmental degradation is particularly a problem in areas where poverty is combined with high population growth and land scarcity. In high-risk situations, where short-term subsistence is at stake and the ecological balance is fragile, cultivation or grazing practices that are environmentally damaging are often inevitable for individual producers, regardless of tenure arrangements and population pressure. High population growth exacerbates this process as it leads to larger livestock herds and higher demands for land and fuel wood. If, on top of that, land is scarce, farms will become smaller, fallow periods will become shorter and use of marginal land will increase. Countries such as Cameroon, Kenya, Malawi, Nigeria and Senegal have seen an increasingly bimodal distribution of land with the farm size in the smallholder sector declining as a result of higher population density. Land redistribution and increasing the productivity on small farms can break the vicious circle of the poverty trap. However, if land reforms include the privatization of common-property resources—which are often under environmental stress—they could lead to a rise in inequalities, as poor people often rely on common-property resources for a significant part of their income and use them particularly as insurance against an economic shock.

12 See Nancy Birdsall and Juan Luis Londono, "Asset inequality matters: an assessment of the World Bank's approach to poverty reduction", *The American Economic Review,* vol. 87, No. 2 (May 1997), pp. 31-37; Deininger and Binswanger,"The evolution of the World Bank's land policy" …; and Klaus Deininger and Lyn Squire, "Does inequality matter?", mimeo, World Bank, July 1996.

Land redistribution alone is not enough

Institutions and policies biased against smallholders have been widespread, particularly in Africa. Research, extension services, seed and fertilizer delivery systems, marketing and transportation are often focused disproportionally on large farms. This bias against smallholders could also have economic reasons. Financial institutions, for example, are less likely to provide credit to smallholders because of the inadequate collateral and high administrative and transaction costs compared with loan size. Moreover, poor farmers are preoccupied with short-term subsistence and cannot afford the uncertainties associated with the adoption of new technologies, such as hybrid seeds. The preoccupation with survival is exacerbated if farmers have difficulty obtaining credit that could help bridge a period with a poor harvest. The adoption of new technologies will be more widespread if they are clearly recognizable as superior to the traditional ones, that is to say, are cheaper, have a lower yield-variance and a lower risk of failure. National and international research systems have focused too much on export crops and too little on the development of drought-resistant and low-cost seeds for rain-fed food agriculture.

Taxes, subsidies and other biases in favour of large farms need to be dismantled before land redistribution commences because land prices are otherwise likely to be higher than the discounted value of profits smallholders can expect, despite the higher productivity on smaller farms. Resettled farmers are thus likely to go bankrupt with these distortions in place and this can result in a reconcentration of land.

The success of land redistribution depends critically on the availability of credit, marketing, roads, water, extension services and technology such as hybrid seeds. Governments are likely to be involved in creating the institutions that deliver these services to smallholders, yet the farmers themselves can also be involved, for example, in the construction of infrastructure. Without credit, farmers might not be able to buy inputs such as seeds and fertilizer and might be forced to sell the land in times of poor weather.[13] Extension services are crucial to teaching farmers about farming techniques and new technology. These played an important role, for example, in the success of the land reforms that Kenya started in the 1950s. Moreover, there have been a number of cases where public marketing functions have been dismantled but where a private sector marketing capacity has been lagging or where private traders used their power to extract rents from smallholders, particularly in remote areas.

Other implementation issues

Land reforms in South and East Asia often involved the transfer of ownership to tenants who were already farming on their land and had the necessary skills and knowledge. Land redistribution is much more difficult when it involves resettlement. In Africa and Latin America, resettlement is more common and the selection of farmers becomes a crucial issue. One study shows that farmers who are married and under 45 years of age, who have larger families, who are better educated and who have farming experience and skills are more likely to be successful as settlers, while the amount of capital that farmers have does not appear to be an important factor in predicting success.[14]

The success of land redistribution also depends on political factors. Unequal distributions of land have often been the result of violence, and delayed and

[13] See *World Economic and Social Survey, 1999* (United Nations publication, Sales No. E.99.II.C.1), chap. VII, for an analysis of the institutions that can provide financial services to poor people.

[14] See Bill H. Kinsey and Hans P. Binswanger, "Characteristics and performance of resettlement programs: a review", *World Development,* vol. 21, No. 9 (September 1993), pp. 1,477-1,494.

protracted land reform has frequently led to violent strife. Moreover, land reforms were often implemented during or after a war or a revolution (for example, in Japan, Mexico and the Republic of Korea). Redistributing land without political upheavals requires careful planning and wide political support. One method for doing this is through the involvement of communities, non-governmental organizations and local governments. Community-based land reforms that use grants, markets and voluntary land sales—rather than the top-down forced-purchase land reforms of the past—have become the preferred mode of implementing land redistributions.[15] In this case, the role of the Government is limited to establishing a framework and providing technical and financial assistance.

Preliminary results of community-based land reforms, such as those in Colombia (see box V.2), show that the effects are dependent on accountability, technical assistance, access to finance and output markets and monitoring of the quality of the programme (for example, agricultural productivity) rather than the quantity (hectares transferred).

The willingness of farmers to pay for the land gives an indication of the commitment to farming and is also an indicator of success. Market prices for land are often inflated as a result of credit subsidies for large farms, tax advantages and the use of land as a hedge against inflation. Even without these distortions, the price of land often exceeds the discounted value of the income from the land because land can be used as collateral. Thus, even if a poor farmer can secure credit to buy land, the income stream will not be sufficient to pay back the loan and distress sales will follow. Moreover, if the land is mortgaged to buy it, it cannot then be used as collateral for borrowing to

15 See, for example, Klaus Deininger, "Making negotiated land reform work: initial experience from Colombia, Brazil and South Africa", *World Development*, vol. 27, No. 4 (April 1999), pp. 651-672.

Box V.2.

LAND REFORM IN COLOMBIA

In Colombia, municipalities devised a land reform plan that identified potential demand for and supply of land and off-farm investments required. The municipalities conducted a systematic effort to disseminate information about the land reform law and to establish a registry of potential beneficiaries, who were selected on the basis of social and economic criteria. The fact that the criteria and the selected candidates were made public increased the transparency, accountability, awareness and acceptance of the programme. The supply of land was enhanced by providing information, increasing awareness among landowners and improving the collection of land taxes. Local non-governmental organizations provided technical assistance and commercial banks administered the grants and provided additional loans for land acquisition and working capital. The banks worked closely with the non-governmental organizations. The non-governmental organizations, for example, supervised the use of the loans and collected loan repayments.

A central part of the programme in Colombia was the model farm project. These projects were designed by the potential beneficiaries, with technical assistance provided by non-governmental organizations, which enabled the beneficiaries to identify the requirements, for example, with regard to investments, marketing channels, working capital and finance. These plans also facilitated the negotiations with the land sellers. The implementation of the projects on the actual farms was also assisted by non-governmental organizations through additional training.

acquire farming inputs. Grants are therefore needed to cover at least the collateral premium of land so as to allow farmers to purchase their land. However, the larger the grant, the fewer the farmers can be assisted.

In sum, land redistribution can give an important boost to development because of the higher productivity on smaller farms, the positive effects on income distribution, which increases the linkages with other sectors, and the possibility of breaking out of a vicious interaction between poverty and the environment. Nevertheless, the positive effects of land reforms are not automatic: reforms need to be combined with additional institutions and policies that ensure the availability of credit, marketing, extension services and technology.

RURAL NON-AGRICULTURAL TRANSFORMATION

Although often neglected, the rural non-agricultural sector can perform a critical function in the transformation of the agricultural sector and the economy as a whole. There are a number of reasons for this. Rural non-agricultural activities are generally more labour-intensive than urban activities and usually generate higher incomes than farming. Their contribution to job creation and poverty reduction is therefore relatively large. Moreover, the capital used in rural non-agricultural activities is to a large extent locally or domestically produced, rather than imported, as is often the case for large-scale urban industry. Rural industry thus requires less foreign exchange. Rural industry is also more geographically dispersed than urban industry and spreads the benefits wider, not least because it provides employment opportunities to disadvantaged people, such as women and the landless. Through the creation of non-agricultural jobs in rural areas, it is also possible to thwart a trend observed in many countries whereby plots of farmland are cut in size from generation to generation through inheritance. In fact, plots of land can become so small that they are no longer able to sustain a family. Rural non-agricultural jobs can supplement family income and provide an alternative source of livelihood.

Furthermore, if farming households also generate non-agricultural income, they diversify their income and reduce their vulnerability to exogenous shocks, such as a drought, and this allows for the smoothing of incomes, thus improving food security. The diversification of income sources is thus a form of insurance, which is, in formal forms, often absent or incomplete in developing countries. Non-agricultural income also provides farmers with (additional) cash, which allows them to invest and purchase inputs, such as seeds and fertilizer. These inputs are needed to increase agricultural productivity but are difficult to acquire without cash or credit. Farmers, particularly smallholders, often face credit constraints, frequently because of a lack of rural financial institutions. If these are present, proof of a steady income from non-agricultural employment can be used to acquire loans for agricultural investments, as has been the case in Benin and Kenya.[16] Furthermore, the demand for agricultural inputs and for transportation services and facilities that process agricultural raw materials provides a stimulus to their production and provision. At the same time, the availability of inputs, transportation and processing stimulates productivity-enhancing changes in agriculture. In Senegal, for example, the absence of transportation and marketing services led to the

[16] See FAO, *The State of Food and Agriculture, 1998* (Rome, FAO, 1998), p. 323.

discontinuance of cowpea cultivation after it had been introduced.[17] Agriculture and rural non-agricultural activities can thus mutually reinforce each other, creating a virtuous circle.

If the linkages between agriculture and other sectors are important, the incentives to satisfy larger demand from agriculture will first be felt by the local producers of goods and services. In a country like India, with a large agricultural sector, rural consumption of manufactured goods is more than twice urban consumption of those goods. Producing the goods and services where the demand is reduces transportation costs and prices, particularly when this involves the processing of agricultural raw materials which usually involves large weight and volume reductions.

Although rural non-agricultural incomes almost always reduce poverty, they do not always reduce income inequality. Rural non-agricultural activities contribute to lower income inequality if poorer households earn a larger share of their income off the farm and if off-farm incomes are higher. The evidence is diverse on the relation between the share of non-farm income in total income on the one hand and total income, total non-farm income or the size of landholdings on the other hand. The conventional negative relationship between the share of non-farm income and total income or landholdings is quite common - particularly in Asia, for example, in Taiwan Province of China (see below) and Latin America - but a positive relationship is also found, more often in Africa. Moreover, in most cases, the richer strata earn higher incomes as a result of more skills and investments or of better access to credit and licences. The cross-country evidence on the comparison of Gini coefficients (a measure of income inequality) for farm and non-farm income is also mixed.[18]

There is one additional beneficial effect from a focus on the rural non-agricultural sector. Many developing countries go through a phase of rapid urbanization as a result of urban-based industrialization (pull factor) and increasing pressures on land (push factor). Urbanization often occurs at a rate that is higher than that of the creation of jobs in the modern sector, leading to urban unemployment and underemployment. Rapid urbanization also creates severe pressures on urban infrastructure, such as roads, sanitation, schools and health facilities. Yet, development and industrialization do not necessarily have to proceed in tandem with urbanization. The rural non-agricultural sector can generate more jobs at lower costs than urban areas because this sector is more labour-intensive and uses fewer imports.

There is evidence that the development of the rural non-agricultural sector has made a substantial contribution to poverty reduction and development in several economies, including China, India, Japan and Taiwan Province of China. In India, for example, when non-agricultural output per capita increased faster than the trend, it reduced rural poverty by a large, significant amount, while urban output growth had no effect on rural poverty. Growth in agriculture and services reduced urban and rural poverty but output growth in industry had no effect on either urban or rural poverty. This might have been a result partly of the capital-intensive and urban-based industrialization that was typical in India. Finally, the effect of non-farm output on poverty rates was largest in those Indian States where the initial conditions were most favourable, in particular those States where literacy was highest.[19]

17 Ibid., p. 313.

18 Ibid., pp. 315-325, for example.

19 See Graham Datt and Martin Ravallion, "Why have some Indian States done better than others at reducing rural poverty?", *Policy Research Working Paper,* No. 1594 (Washington, D. C., World Bank, April 1996); Martin Ravallion and Graham Datt, "How important to India's poor is the sectoral composition of economic growth?", *The World Bank Economic Review,* vol. 10, No. 1 (January 1996), pp. 1-25; and Martin Ravallion and Gaurav Datt, "When is growth pro-poor? evidence from the diverse experience of India's States", *Policy Research Working Paper,* No. 2263 (Washington, D. C., World Bank, December 1999).

Rural transformation in China

In China, the agricultural reforms that commenced in 1978 contributed to the rapid expansion of the rural non-agricultural sector. One of the major reforms was the expansion of the household responsibility system (HRS). The HRS was introduced as an experiment in Anhwei province in 1978, officially accepted in 1981 and by 1984 had been adopted by 99 per cent of the production teams, which lost as a result most of their administrative functions at the bottom of the hierarchical community structure. Under the HRS, households obtained use rights to collectively owned land under long-term leases, which initially lasted 5 years and have subsequently been extended to 15 and 30 years. Farmers were still obliged to provide a share of the output to the collectives' production quotas but the remaining output could be sold on the free market or to the Government at negotiated prices. Over the years, the share subject to quotas has been reduced and mandatory production plans were abolished in 1985. These reforms were supplemented by a number of other measures, such as increases in procurement prices and the size of private plots, the introduction of hybrid seeds, the encouragement of diversification and the relaxation of rural markets and non-agricultural activities of farmers.

The reforms in agriculture provided a direct boost to rural non-agricultural activities in several ways. Firstly, agriculture released a large amount of labour as a result of the higher labour productivity in agriculture and the decollectivization of agriculture, which transformed a hidden labour surplus into an open one. In 1978, 790 million Chinese, amounting to 82 per cent of the total population, were living in rural areas. Rural non-agricultural activities were partly encouraged to create off-farm employment for farmers in rural areas as migration was restricted. Secondly, the rapid expansion of rural firms outside agriculture was to a considerable extent financed by funds from agriculture. Thirdly, the diversification of agricultural production increased the opportunities for the processing of agricultural raw materials, for example, in the food, beverage and textile industries. Fourthly, the market liberalization of inputs stimulated the rural production of such inputs as fertilizers, pesticides, machinery and equipment. Finally, one of the most important effects of the agricultural reforms was the increase in agricultural incomes, which was a result of higher prices (quota, above-quota and free market prices) and higher yields. As incomes increased, farmers demanded a more varied consumption basket that included, in particular, more manufactured goods, houses and services but also more expensive foods (such as fruit and meat). This created substantial consumption linkages with rural industry, construction and service providers.

The agricultural reforms, export incentives and reforms of, for example, prices, markets, finance and foreign investment, fuelled the rise of the rural non-agricultural sector, which became one of the most dynamic sectors in China. Productivity has grown fast, partly through the upgrading of technology. This sector has also attracted substantial amounts of foreign direct investment (FDI) and exported a large share of its output. Well known are the township and village enterprises (TVEs), which are collectives owned and operated by local communities. Less known are the individually owned enterprises. Both operate under market principles and hard budget constraints and are not subject to State planning or price controls. TVEs had existed before the reforms that commenced in 1978 (although under a different name before 1984) and

increased from 1.53 million in 1978 to 1.65 million in 1994, but they almost doubled in size, measured by the number of people engaged per firm. Individually owned enterprises, allowed since 1979, grew much faster, to 23 million in 1994, but remained approximately the same size at about three employees per enterprise. Although total rural non-agricultural employment had increased only from 9 million in 1970 to 32 million in 1978, the figure reached 166 million in 1998, amounting to 24 per cent of total employment.[20] TVEs and individually owned enterprises accounted for 3 per cent of total non-agricultural GDP in 1978, but for 28 per cent in 1998. In certain manufacturing sectors, such as garments, building materials and metal products, the share exceeds one half.

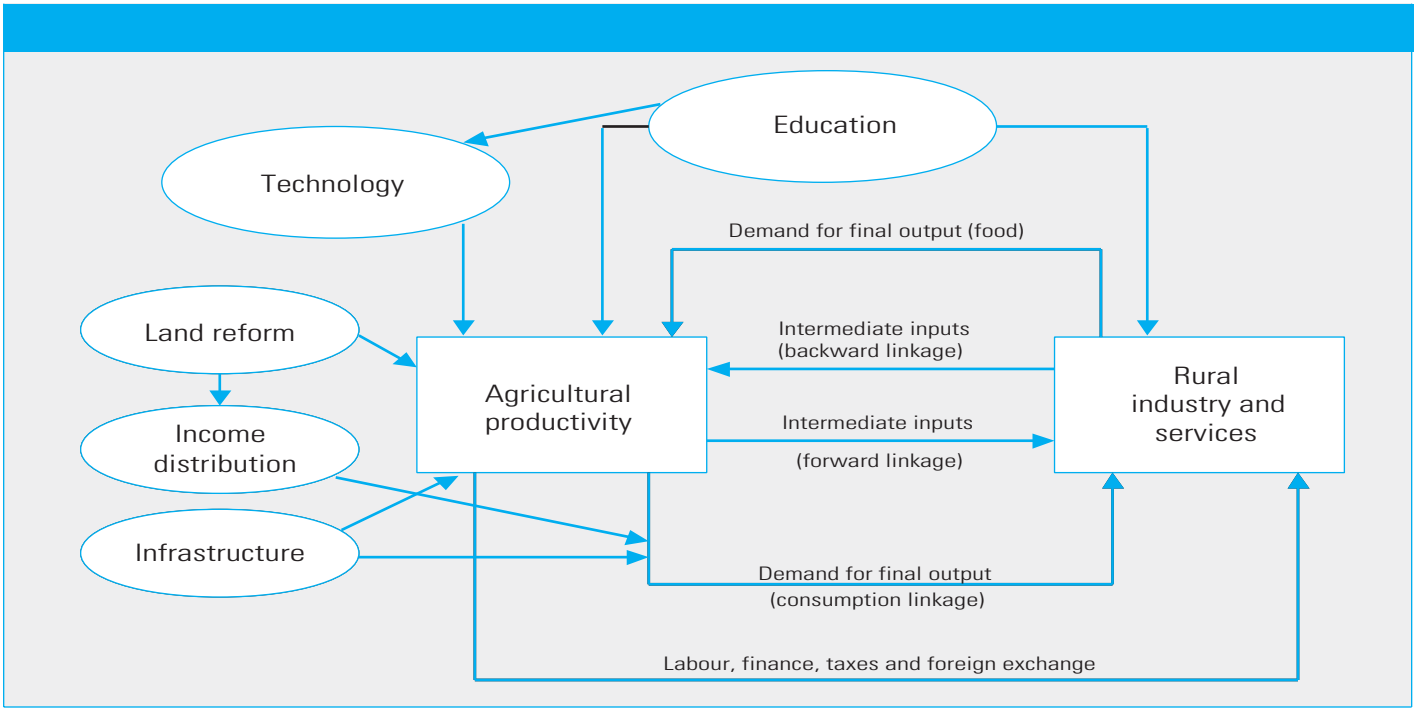
[20] There is, however, some double-counting, as farmers who work part-time outside agriculture are also included.

The potential role in Africa

The rural non-agricultural sector can potentially perform a pivotal role in the development of Africa. Rural households in sub-Saharan Africa earn already on average 45 per cent of their income from non-farm activities, with the share ranging from 22 to 93 per cent.[21] A number of these activities, such as beer brewing, bread baking, weaving and basket making, have traditionally been and often still are performed on the farm and often by women. Higher demand would open the possibility of production on a larger scale and specialization. The transformation from crafts to larger-scale production is crucial and can, to put it simply, result either in small off-farm firms in rural towns or in large urban capital-intensive companies. Which development path evolves depends on a number of factors (see figure V.2).

[21] See Thomas Reardon, "Using evidence of household income diversification to inform study of the rural non-farm labor market in Africa", *World Development*, vol. 25, No. 5 (May 1997), pp. 735-747.

Figure V.2.
INTERACTION BETWEEN AGRICULGTURE AND THE RURAL NON-AGRICULTURAL SECTOR



The first factor is an increase of agricultural productivity. As some researchers note, "buoyant agriculture is the single most important cause of a flourishing non-farm sector".[22] An increase in agricultural productivity gives a boost to the demand for goods and services produced by the rural non-agricultural sector. The non-agricultural sector can in turn provide productivity-enhancing inputs to agriculture, leading to a virtuous circle. Moreover, agriculture can provide the labour, finance and food needed to transform the rural non-agricultural sector and the economy as a whole. This positive interaction between agriculture and the rural non-agricultural sector has been a central feature of the development experience of China, Japan and Taiwan Province of China.

In Africa, agricultural productivity is low, and agricultural output per capita has been almost stagnant for three decades. One of the main reasons for the poor performance of African agriculture is the absence of a green revolution. The green revolution in Asia was made possible by an international publicly financed research programme that developed high-yielding varieties of wheat and rice, which responded very well to fertilizers and controlled water management. These varieties were not, however, very suitable for Africa's climate (in terms, for example, of the variability of rain), and soil or in the context of its diseases.

There is a need to focus research on the development of drought-resistant, low-risk and low-cost innovations for rain-fed food agriculture that do not need many external inputs.[23] However, commercial interest of developed countries or corporations in research on typical African food crops is limited because these crops are neither consumed nor grown in developed countries, only a small fraction are exported and the domestic market is small compared with that of Asia. Yet, research in this area could be encouraged by Governments of developed countries, for example, by offering tax incentives to firms that undertake research on typical African crops. Agricultural technology is highly location-specific and needs local research and development capacity, as the case of hybrid maize in Kenya and Zimbabwe has demonstrated. However, the research capacity in Africa has been weak, lacking a critical mass and being biased towards export crops.

In order to improve adoption rates of new seeds among smallholders and to achieve a green revolution in Africa, investments in infrastructure and the development of institutions that provide credit, inputs and extension services, are also necessary. The development of these institutions, in combination with land reforms in certain countries, is a critical step with respect to raising agricultural productivity and sharing the benefits as widely as possible. This, in turn, will enhance the prospects of the rural non-agricultural sector.

Another means to advance the rural non-agricultural sector is through the development of horticulture. Horticultural products usually have higher market values per acre of land than other crops, and fruit and vegetables are important components of a nutritious diet. Moreover, horticulture also typically requires substantial processing and packaging and thus creates jobs in rural areas. Furthermore, if the processing and packaging are of sufficient quality and infrastructure is available to guarantee timely deliveries, horticulture also creates opportunities for export.

The second factor determining the extent of non-farm rural activity is the improvement and extension of rural infrastructure, such as roads and electrici-

[22] See Bagachwa and Stewart, loc. cit., p. 181.

[23] See *World Economic and Social Survey, 1995* (United Nations publication, Sales No. E.95.II.C.1), box VII.2.

ty. In Africa and elsewhere, the presence of infrastructure, mostly through its effect on transportation and information costs, is an important condition for the adoption of new technology (such as new seeds and fertilizer), the marketing of an agricultural surplus, access to credit and the development of rural non-agricultural activities. This is also illustrated by the case of Taiwan Province of China (see below). Through these effects, infrastructure makes a principal contribution to the reduction of poverty. Rural infrastructure is particularly poor in Africa with very low road density, telephone availability and electrification rates. Redressing these obstacles would have a positive effect on the development of the rural non-agricultural sector.

The third condition for a favourable development of the rural non-agricultural sector is an adequate level of education in rural areas. Evidence shows that higher levels of education have generally a positive effect on the adoption of new technologies (such as high-yielding seeds) and agricultural productivity and incomes. Moreover, higher levels of education and skill acquisition in rural areas increase the likelihood that farm households will employ entrepreneurial initiatives outside agriculture or obtain non-agricultural jobs.[24] In addition, the effect of education on productivity becomes much more pronounced after a certain threshold—in most cases, four to six years of schooling. Moreover, there is evidence that returns to education are higher in non-agricultural activities and that education stimulates a shift from farm to non-farm activities.[25] Access to schools and the quality of education are wanting in many parts of rural Africa. There is particularly a need for vocational and technical schools that provide formal training and generate the skills required for the adoption of new technology in agriculture, for participation in the non-agricultural sector and especially for the development of subcontracting links with urban or foreign firms, which require higher-quality products and better timeliness of delivery.

The fourth condition, which played a critical role in several East Asian countries, is land reforms. As discussed above, land reforms, if well implemented, not only contribute to political stability but also lead to a more equal income distribution, which increases the demand for goods and services produced in rural areas.

THE CASE OF TAIWAN PROVINCE OF CHINA

Taiwan Province of China, which has experienced one of the most astonishing take-offs in economic history, has often been cited as an example where the agricultural sector has played a crucial role in fostering rapid development. The present section therefore contains a more detailed examination of the role of agriculture in that economy.[26]

Development of agriculture

The favourable conditions for the rapid development of Taiwan Province of China after the Second World War were partly created during its occupation by Japan between 1895 and 1945. Japan wanted to develop an agricultural surplus in Taiwan Province of China, of rice and sugar in particular, as it had started to face food shortages around the turn of the century. To that end, experimental

[24] A recent overview is provided by J. Edward Taylor and Antonio Yúnez-Naude, *Education, Migration and Productivity: An Analytical Approach and Evidence from Rural Mexico* (Paris, OECD Development Centre, 1999).

[25] See, for example, FAO, *The State of Food and Agriculture, 1998* (Rome, FAO, 1998), pp. 309-312; and Shenggen Fan, Peter Hazell and Sukhadeo Thorat, "Linkages between government spending, growth, and poverty in rural India", *Research Report,* No. 110 (Washington, D. C., International Food Policy Research Institute, 1999).

[26] This section is largely based on John C. H. Fei, Gustav Ranis and Shirley W. H. Y. Kuo, *Growth with Equity: The Taiwan Case* (New York, Oxford University Press, 1979); Samuel Pao-San Ho, "Development alternatives: the case of Taiwan", dissertation (New Haven, Connecticut, Yale University, 1965); Samuel Pao-San Ho, *Economic Development of Taiwan, 1860-1970* (New Haven, Connecticut, Yale University Press, 1978); Teng-hui Lee, *Intersectoral Capital Flows in the Economic Development of Taiwan, 1895-1960* (Ithaca, New York, Cornell University Press, 1971); Gustav Ranis, "Another look at the East Asian miracle", *The World Bank Economic Review,* vol. 9, No. 3 (September 1995), pp. 50-534; Gustav Ranis and Frances Stewart, "Rural nonagricultural activities in development: theory and application", *Journal of Development Economics,* vol. 40, No. 1 (February 1993), pp. 75-101; and Erik Thorbecke and Henry Wan, Jr., *Taiwan's Development Experience: Lessons on Roles of Government and Market* (Boston, Massachusetts, Kluwer, 1999).

farms and extension services were set up (as early as 1899), which were instrumental in the development and distribution of rice varieties that were suited to the ecology of Taiwan Province of China.[27] However, without improved water management and additional fertilizers, the benefits of the new varieties are limited. Investments in irrigation infrastructure, therefore, were heavy. The share of irrigated area in cultivated area increased from about 35 per cent in 1915 to 60 per cent in 1937. Chemical fertilizers were initially subsidized (even briefly distributed free) and imported from Japan, but, later, factories were built in Taiwan Province of China. The use of chemical fertilizers increased from 12 kilograms (kg) per hectare in 1920 to 55 kg per hectare in 1935. Although the adoption of the new rice varieties was initially enforced, their profitability when used jointly with irrigation and chemical fertilizers quickly became apparent and served to encourage their use. Because of these investments and institutional and technical innovations, rice and agricultural production and productivity increased rapidly, especially after 1920. Between 1920 and 1940, agricultural production increased by 3.8 per cent per year.

During the colonial period, a number of institutional reforms, which were instrumental in generating technical change in agriculture, were implemented. The Japanese created—besides the just-mentioned experimental farms—credit cooperatives, a land bank (Hypothec Bank) and compulsory farmers' associations, which were used to disperse new technologies. Although these institutions were administered separately, they were very much coordinated by the Government. Changes were also made in the land tenure system, which provided landlords with incentives to invest and adopt new technology, and the formation of landlords-tenants associations was encouraged to prevent tenancy disputes and foster production. The land distribution, however, remained skewed during the colonial period. This only changed as a result of the land reforms introduced after the Second World War.

As the intention of Japan was to export the colony's agricultural surplus to Japan, it invested heavily in transportation infrastructure. Between 40 and 60 per cent of development funds went into transport and communication and 12,076 kilometres (km) of roads and 907 km of railroads had been built by 1940, having started from basically nothing in 1895. Large investments were also made in the capacity to generate electric power, which grew from 50,000 kilowatts (kW) in the early 1930s to more than 300,000 kW in the mid-1940s. One observer noted that "the development of the electric power industry along with the construction of the basic transportation system … (was) probably the most important contribution Japan made towards future industrialization".[28]

Perhaps equally significant were the efforts to enhance human capital. As was often the case with colonial powers, Japan's emphasis on education was partly incited by the desire to teach the colonized the language of the colonizers and make the citizens loyal subjects. Thus, elementary education was greatly expanded during the colonial period, particularly after 1919. By 1938, fifty per cent of Taiwanese children between 8 and 14 years of age were in school. Although there was equality in theory and almost all teachers were Japanese, expenditures per student were twice as high in the schools dominated by Japanese children. The development of education paid off: the literacy rate increased from 1 per cent in 1905 to 27 per cent in 1940, creating one of the most literate populations in Asia. After 1930, the access of Taiwanese to

27 These so-called Ponlai varieties, hybrids of Japanese and Taiwanese varieties, had first been introduced commercially in 1922 and by 1940 they occupied half the rice acreage. Japan also introduced improved sugar cane varieties from Hawaii and Java.

28 See Samuel Pao-San Ho, "Development alternatives: the case of Taiwan", dissertation (New Haven, Connecticut, Yale University, 1965), p. 36.

post-elementary, especially technical and vocational, education was increased. The health status also improved through sewerage construction, sanitation services and vaccination programmes. Life expectancy of males increased by 13.4 years to 41.1 years and of females by 16.7 years to 45.7 years between 1906 and 1936-1940.

In short, the investments in physical infrastructure (for example, irrigation and roads), technical change, human capital and institutional reforms brought about an early development of the agricultural sector in Taiwan Province of China.

Land reform

Despite the changes made in the land tenure system and landlord-tenant relations during colonial times, there was still a need for land reform after the Second World War, and the political turmoil made this possible. The farmers' associations formed during the colonial period were able to reduce the number of disputes between landlords and tenants somewhat and the 1939 Decree for the Control of Farm Rents had been able to prevent further rent increases. Nevertheless, the land distribution was very skewed, landlord abuse was pervasive and the demand for land was large.[29]

Land reform was sponsored by the Government and the Joint Commission on Rural Reconstruction (JCRR).[30] The programme started in 1949 with a compulsory reduction of rent to a maximum of 37.5 per cent of the farmers' main crop yield, the abolition of advance payment, provisions in case of crop failures and the enforcement of written contracts, which should have a lease period of at least six years. These measures provided new incentives to farmers to invest and increase production, which materialized swiftly.

In 1951, the Government accelerated the sale of publicly owned land, which had been started in 1948. Some of this land had previously been owned by Japanese companies and farmed by tenants. The price was set at 2.5 times the annual main crop yield, which could be paid over a 10-year period. Finally, the Land-to-the-Tiller Act was adopted in 1953. The Act stipulated that land owned by landlords in excess of 3 *chia* (2.9 hectares) (1 *chia* = 0.97 hectare) was to be compulsorily purchased by the Government and resold to the incumbent tenant, with the price fixed at 2.5 times the annual main crop yield. The owner was paid up front in commodity bonds and stocks in four public enterprises previously owned by the Japanese and the buyer could pay over a 10-year period. Between May and December 1953, the number of hectares sold to tenants equalled 139,247.

The land reforms were very comprehensive, in terms of area and households affected (see table V.1), and led to a significant increase in the share of farm families that owned the land, from 32 per cent in 1939-1940 to 64 per cent in 1959-1960. Moreover, the share of land farmed by its owner rose from 44 per cent in 1939-1940 to 86 per cent in 1959-1960. The distribution also greatly improved as fewer households owned very small or very large plots. The proportion of farm families owning between 0.5 and 3 *chia* increased from 46 per cent in 1952 to 76 per cent in 1960. As a result, the average plot size rose as well for all size classes of less than 5 *chia*.

The land reforms were accompanied by improvements in rural infrastructure, such as extensions and repairs of irrigation systems, and by other institutional reforms. The farmers' associations were reorganized, changing from top-

[29] In 1939, 43.2 per cent of the owner-cultivator households owned less that 0.5 *chia* (0.485 hectare (ha)). After the Japanese left, the associations disintegrated and landlords took their chances and increased rents, demanded advanced payments and evicted some tenants. Moreover, an estimated 640,000 people moved from the mainland in 1945-1946 and an additional 2 million in 1949-1950 (out of a population of about 6 million in 1946). This increased the demand for food and land. To avoid unrest, land reform became imperative.

[30] The Joint Commission on Rural Reconstruction (JCRR) was established by the United States Congress in 1948 to allocate aid and provide technical assistance to Taiwan Province of China. It has been estimated that the JCRR provided 35 per cent of all agricultural capital investment between 1950 and 1962.

Table V.1.
LAND REFORM IN TAIWAN PROVINCE OF CHINA

	Rent control	Sale of public land 1948-1958	Land-to-the Tiller Act, 1953
Area affected (thousands of hectares)	249.2	69.5	139.2
As percentage of cultivated area in 1951-1955	29.2	8.1	16.4
Farm households affected (thousands)	302.3	139.7	194.9
As percentage of average number for 1951-1955	43.3	20.0	27.9

Source: Samuel P. S. Ho, *Economic Development of Taiwan, 1860-1970* (New Haven, Connecticut, Yale University Press, 1978), p. 163.

down to bottom-up (farmer-controlled) organizations that supplied inputs, purchased and processed outputs, provided credit and savings facilities and promoted rural industry. The farmers' associations were used to introduce new technology and new crops, such as cotton, fruits, vegetables and, during the 1960s, asparagus and mushrooms. The new technologies, new crops, fertilizers and finance were largely supplied to these associations by the JCRR. Moreover, agricultural research was expanded so that in 1960 there were 79 agricultural research workers for every 100,000 persons active in agriculture (compared with 1.2 per 100,000 in India and 60 per 100,000 in Japan).

The land reforms and the complementary institutional reforms and investments in infrastructure created the conditions for a rapid change in the agricultural sector. After agricultural production had regained its pre-war peak in 1951, it grew by about 4.2 per cent annually during the 1950s and 1960s. As a result, output was nearly 50 per cent higher in 1960, and nearly 2.5 times higher in 1970, than in 1952.

Most of this increase in output can be attributed to higher productivity and the adoption of new technology that was made available through Government-supported channels.[31] During the two decades up to 1970, a gradual shift away from the traditional crops, rice and sugar, was established. This was partly the result of the fact that the new owners of the land did not need to grow rice any more for rental payments to the previous landlords. Moreover, the new technology and new crops increased the labour-intensity of production and saved on the scarce factor, land, and this was, of course, the desired pattern of technical change during the 1950s, given the excess labour and shortage of land. As a result, agricultural employment, working days, working days per worker and working days per hectare all increased, at least until the mid-1960s when labour shortages started to emerge.

In sum, the success of the agricultural transformation was made possible by a combination of private incentives and public action. The publicly instigated land reforms enhanced the private incentives to invest and purchase inputs and the Government created the institutions and infrastructure that made these private investments possible and profitable.

31 Agricultural employment and cultivated area had grown by only 2 per cent and 3 per cent, respectively, between 1952 and 1970.

"Support industry with agriculture and develop agriculture with industry"

The seeds for the development of industry were sown by agriculture. Before 1930, the emphasis of government policies had largely been on agriculture, but during the 1930s the attention given to industry increased so that resources in Japan could be shifted towards heavier and war-related industries. Large firms were owned mostly by the Government or the Japanese; and large-scale industrial activity by the Taiwanese was discouraged in the colonial period, but small-scale manufacturing was allowed. In 1930, half of all those engaged in manufacturing worked within the home of the craftsman or in an establishment adjacent to the home with fewer than five workers. Much of this very small scale manufacturing, producing mostly processed food, apparel, textiles and wood and bamboo products, was owned by Taiwanese and took place in rural areas. During the 1930s, new energy supplies (for example, electricity) and new machines (imported from Japan) made manufacturing on a larger scale more efficient. By 1940, the number of people working in factories with more than five workers had doubled, accounting for 75 per cent of those engaged in manufacturing. Despite the increase in scale and modernization of industry, small- and medium-sized firms continued to play an important role until the 1960s.

Small-scale and large-scale industry were both tied to agriculture during the colonial era and these linkages were partly intensified by the policies emphasizing import-substitution and food processing. The bulk of industrial output either used agricultural products as inputs (particularly food processing and sugar refining), provided inputs for agriculture (for example, fertilizers), or used by-products of sugar refining (molasses, which was used in the production of alcohol). Moreover, farmers worked in rural factories to enhance their incomes. Thus, most of the colonial industry was linked to agriculture, partly as a result of the large investments in rural infrastructure, such as roads and electricity. These linkages, combined with the fact that peasants cultivated the major export crops (sugar and rice), prevented a dual-enclave economy from developing; but this was not the case for many other developing economies where little interaction between the modern industrial sector and traditional agriculture has been typical.

The colonial period had prepared the economy for a take-off. Modernization of agriculture and industry advanced substantially. Infrastructure was built. Institutions were created. Moreover, significant progress was made with regard to the education and health of the labour force. The favourable conditions for a take-off of industry were enhanced after the Second World War by the land reforms, ongoing emphasis on education and training and the continued investments in rural infrastructure. School enrolments and rural infrastructure were already substantial during the colonial period, but increased rapidly after the Second World War as well (see table V.2). Rural areas were not ignored and an urban bias was avoided—and this was not the case for many other developing economies. For example, electricity rates were the same in rural and urban areas. By 1960, already 70 per cent of farm households (and by 1979 virtually the whole island) had access to electricity. By 1979, 89 per cent of the population aged six years or over were literate.

Moreover, the conditions were particularly favourable for a fruitful interaction between agriculture and industry as a result of the equitable distribution of

Table V.2.
PHYSICAL INFRASTRUCTURE AND HUMAN-CAPITAL INDICATORS IN TAIWAN PROVINCE OF CHINA, 1952-1998

	1952	1960	1970	1980	1990	1998
Installed electricity capacity (megawatts)	332	709	2 720	9 056	16 883	26 680
Paved roads (kilometres)	1 046	2 485	6 566	12 367	17 116	17 207
Primary education indicators (percentage)						
Enrolment[a]	84.0	95.6	98.0	99.7	99.9	99.9
Primary school graduates continuing to secondary school[b]	34.9	52.2	78.6	96.1	99.8	99.6

Source: Council for Economic Planning and Development, *Taiwan Statistical Data Book, 1999* (Taipei, Council for Economic Planning and Development, 1999).

[a] Enrolment for school year starting in indicated year. In 1968, the period of compulsory education was extended from six to nine years.

[b] For 1967 and before, figures refer to students in the graduating primary school class who entered secondary school. Subsequently, figures refer to actual graduates who entered secondary school.

land, the availability of rural infrastructure, the presence of an educated rural labour force, the existing linkages between the two sectors and the size of the rural-based industrial sector. Thus, when agricultural output started to rise rapidly in the 1950s, industry was able to benefit in several ways.

By 1953, inflation had been reduced to the single-digit level and the economy had recovered from the neglect and vast damage inflicted during the Second World War. The economy was still essentially based on agriculture. Agriculture accounted in 1952 for 32 per cent of GDP, 56 per cent of employment and 92 per cent of merchandise exports, if processed agricultural exports are included. However, after 1953 the Government increasingly turned its attention to the development of industry. It advocated initially an import-substitution strategy that focused on the domestic production of goods that would replace imports; but, in contrast to many other developing economies, agriculture was not neglected. For example, agriculture obtained a large share of the foreign aid (mostly through the JCRR) and 23 per cent of total investment under the second development plan, covering 1957-1960. Moreover, the terms of trade of agriculture (vis-à-vis non-agriculture) never fell below 96 (1952 = 100) in the 1950s. The development plans of the 1950s and 1960s aimed to achieve balanced growth between agriculture and industry and to "support industry with agriculture and develop agriculture with industry".[32] In effect, the linkages between agriculture and industry increased as the import-substitution programme emphasized the processing of food and the supply of industrial inputs to agriculture. During the period 1954-1958, agricultural raw materials accounted on average for 61 per cent of the value of manufacturing gross output, but this share dropped subsequently.

Linkages with the rural non-industrial sector also existed as farmers asked for repair and trade services. The providers of services were usually located close to customers. Because the tradability of services was low and personal contact was often necessary, demand from agriculture stimulated the production of rural-based services.

Besides the input linkages between agriculture and the rest of the economy, there was also an interaction with regard to final demand and employment.

[32] See Samuel Pao-San Ho, "Development alternatives: the case of Taiwan", dissertation (New Haven, Connecticut, Yale University, 1965), p. 52.

Consumption linkages were particularly pronounced in Taiwan Province of China. Some have argued that higher incomes in agriculture provided the most important initial boost to manufacturing. As discussed, institutional and technical innovations introduced in agriculture led to higher productivity and higher incomes, which were widely shared because of the land reforms. Moreover, the higher the income, the larger the share spent on non-agricultural goods and services; and because the size of the agricultural sector was still substantial, higher agricultural incomes translated into a significant demand in rural areas for non-agricultural goods and services. The small firms in rural areas were close by and particularly suited to satisfy this demand, as both the demand and the supply were concentrated on such items as textiles, garments and wood and bamboo products. As a result, rural and semi-urban prefectures recorded faster growth in the number of establishments between 1951 and 1968 than cities, semi-urban cities and mixed prefectures.

The growth of the often labour-intensive rural secondary and tertiary sectors required an increasing supply of workers. Agriculture was able to meet the demand because of the higher agricultural productivity and the existence of substantial disguised unemployed in agriculture in the 1950s and early 1960s.[33] Because of the availability of labour, new firms (particularly those with labour-intensive production methods) often established themselves in rural areas. The rapid increase in industrial employment, particularly in rural areas, reduced unemployment and underemployment to such an extent that labour shortages emerged after 1968.

The labour flow further enhanced the symbiotic relation between agriculture and industry. Agricultural incomes led to the demand for industrial goods, and farmers working in manufacturing enhanced incomes for farmers. The transformation of farm-based manufacturing into off-farm manufacturing, and the growth of rural manufacturing started in the 1930s, accelerated in the 1950s and continued in the 1960s. Part-time and seasonal off-farm employment accounted for an increasing share of farmers' income.[34] This trend made the income distribution more equal as non-agricultural income was more equally distributed than agricultural income. Moreover, the fact that the share of non-farm income in total income was generally higher and increased faster for farmers with less land further equalized the income distribution. A more equal income distribution meant a higher demand for the kind of goods and services that the rural firms were producing.

The entrepreneurs that started new manufacturing or service-oriented firms were sometimes former farmers. This phenomenon was possible partly because of the export orientation of agriculture, the educational attainment in rural areas and the skills those entrepreneurs had acquired as craftsmen - factors all dating back to the colonial period. The investments by farmers in non-agricultural activities were limited, however, by the taxation of agriculture. The productivity in agriculture was high enough to allow for some taxation that would not distort economic incentives too much. The tax revenues were spent by the Government, for example, on productive items such as education, health care and infrastructure, but also on defence. The total tax burden of agriculture declined gradually after 1964 and rapidly after 1969. In the 1970s, the Government started to provide tax exemptions, price supports and subsidies to agriculture. By 1975, the tax burden was lighter on farm families than on non-farm families.

33 According to Ho ("Development alternatives ...., pp. 59-61) there were about 310,000 disguised unemployed in the 1950s. Ho (*Economic Development of Taiwan ...*, pp. 157-8) quotes a study that sets the annual underemployment rate at 40 per cent in the early 1960s.

34 The share of non-farm income in the total income of farm families increased from 22 per cent in 1952 to 41 per cent in 1962 and the proportion of farm families who considered themselves only part-time farmers rose from 52 per cent in 1960 to 72 per cent in 1970.

The agricultural surplus was not only invested directly and taxed, but also saved and intermediated by financial institutions. The savings rate increased during the 1950s, partly as a result of the land reforms and the increase in incomes. Yet, the net savings that left agriculture as a proportion of the surplus remained about the same (at 20 per cent) as investments in agriculture and the liabilities of agriculture also increased. Nonetheless, the outflow of savings provided an important source of finance for investments in the non-agricultural sectors.

The increase in agricultural productivity made it possible for food prices to stay relatively low without squeezing the income of farmers. This kept real wages in check. Real wages increased moderately during the 1950s and most of the 1960s and started to rise faster only after labour shortages emerged at the end of the 1960s.

Another contribution that agriculture made to the broader development of the economy was through the generation of foreign exchange revenues, which financed the imports of capital goods and intermediate goods. During the 1950s, agricultural goods and processed agricultural products still accounted for the majority of export revenues, although their share declined rapidly from 92 per cent in 1952 to 68 per cent in 1960 and to 21 per cent in 1970, as their revenues increased less rapidly than the revenues from industrial products. On the import side, the share of capital goods and intermediate inputs increased from 80 per cent in 1952 to 95 per cent in 1970. In absolute numbers, agricultural exports (including processed goods) amounted to $107 million and imports of capital goods and intermediate inputs to $150 million in 1952; in 1970, these numbers were $317 million and $1,450 million, respectively.

Concluding remarks on the case of Taiwan Province of China

Institutional reforms stimulated technical change in agriculture in Taiwan Province of China and increased agricultural production. Agriculture stimulated the development of the rural non-agricultural sector through the demand for intermediate inputs and consumer goods and services, through the supply of labour and entrepreneurs, through the provision of finance, tax revenues and foreign exchange and through low food prices. However, the contribution of agriculture to broader economic development was possible only as a result of extensive land reforms and the large and long-lasting efforts to increase agricultural productivity, raise educational attainment in rural areas and improve the quantity and quality of rural infrastructure. In effect, rather than be pulled by industry, agriculture pushed industry.

CONCLUSION

A development strategy that focuses on agriculture and the rural non-agricultural sector has the advantage of being more labour-intensive and less import-intensive. Although often neglected, agriculture can play an active role in triggering a sustained increase in living standards that is widely shared. Yet, this is not automatic. A number of conditions have to be fulfilled in order for agriculture to be able to play this role. Firstly, productivity in agriculture has to increase so that agriculture can provide the labour and entrepreneurs, finance

and food needed in other sectors and the demand that will stimulate the production of goods and services, particularly in rural areas. Secondly, the rural infrastructure and institutions that will facilitate the transformation of the economy need to be in place. One of the institutional changes that can perform a critical role is land reform, as it can boost agricultural productivity and enhance the linkages with other sectors. Thirdly, the level of educational attainment in rural areas needs to be raised. This will have positive effects on agricultural productivity and on the development of the rural non-agricultural sector.

To realize the full potential of the agricultural sector and exploit the ability of this sector to trigger development of other sectors, considerable effort and resources need to be devoted to this sector and rural areas. Yet, agriculture does not seem to be a priority area for international financial institutions and bilateral donors. For example, up to 30 June 1980, the World Bank (that is to say the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA)) had devoted 23 per cent of its resources to agriculture. This proportion was unchanged by 1990, but by 1999 it had declined to 18 per cent and in fiscal year 1999 it was less than 10 per cent.[35] A similar lack of attention can be observed in the data from the Development Assistance Committee (DAC). For example, in 1996 DAC members devoted only 9.5 per cent of official development assistance (ODA) to agriculture. The international community has in particular an important role to play with regard to the funding of agricultural research. Publicly funded research was crucial in the green revolution for Asia and is just as critical if Africa is ever to have a green revolution.

[35] See World Bank, *Annual Reports 1980, 1990* and *1999* (Washington, D. C., World Bank, 1980, 1990 and 1999).

VI EDUCATION AS A PREREQUISITE OF SUSTAINED GROWTH

Education has long been seen not only as a means to achieve productivity growth, but also as an end in itself—it expands human capabilities: from the ability to undertake the most elementary functions of a human being to the ability to enjoy the greatest fruits of the human mind. The present chapter will concentrate on the relationship between education and the take-off into sustained economic growth. In chapter VII, on technology, the discussion will concentrate on the role of the higher levels of education in enabling a country to take full advantage of the possibilities opened up by new technological advances.

One of the most basic products of education is literacy. This allows people to read great works of literature, including the texts upon which their own religion is based, to follow road signs so as to undertake a journey, to compare the price of products, to understand written instructions necessary to operate machinery, to choose the right seeds or fertilizers, to take the required medicines in the prescribed manner, to find out at what time a television or radio programme is being shown, to understand what the political leaders are promising to do and to acquire the freedom to enter into contracts (like that governing the purchase of a product on credit terms) that would otherwise need the intervention of a "lettered person". An illiterate person cannot function in the way a literate person can and a society made up largely of uneducated people is very different from one comprising educated people. In a society with a small educated elite and a large mass of illiterate people, economic activity, even for the elite, becomes difficult—how can you advertise for labour or for the sale of your products in the press or through hand- outs, and how can you sell products to people who are not able to maintain a bank account or to understand how to determine their balance? How can the Government expect its enactments concerning health provisions to be understood and obeyed? How can it expect its policies to be understood? Clearly it is in everyone's interests to have an educated population.

At the 1995 World Summit for Social Development held in Copenhagen, Governments committed themselves to attaining universal and equitable access to quality education and primary health care.[1] In April 2000, the World Education Forum at Dakar stressed that it was "unacceptable in the year 2000 that more than 113 million children have no access to primary education, 880 million adults are illiterate, gender discrimination continues to permeate education systems, and the quality of learning and the acquisition of human values and skills fall far short of the aspiration and

[1] See commitment 6 of the Copenhagen Declaration on Social Development, *Report of the World Summit for Social Development, Copenhagen, 6-12 March 1995* (United Nations publication, Sales No. E. 96.IV.8), chap. I, resolution 1, Annex I).

needs of individuals and societies."[2] The Forum reaffirmed the goals of Education for All of ensuring that by 2015 all children, with special emphasis on girls and children in difficult circumstances and from ethnic minorities, have access to and complete free and compulsory primary education of good quality. Other goals are to eliminate gender disparities in primary and secondary education by 2005, and to achieve gender equality in education by 2015 and a 50 per cent improvement in levels of adult literacy, also by 2015. These goals do not just come from the economic desirability of forming an adequately educated labour force, but are also supported by the Universal Declaration of Human Rights[3] and the Convention on the Rights of the Child.[4] Governments have an obligation to ensure these rights, and it was fitting that this should again be stressed at the beginning of the twenty-first century. In the Group of Eight (G-8) Summit in Okinawa in July 2000, the leaders reaffirmed their commitment that no Government seriously committed to achieving Education for All would be thwarted in this achievement by lack of resources. It was tragic, however, that there was a need to set as goals what should have been accomplished during the twentieth century.

THE IMPORTANCE OF HUMAN CAPITAL

Although the term "human capital" entered the vocabulary of economics only in the 1960s, the idea that knowledge and skills of workers are important determinants of productivity and of a country's overall wealth is not new. Adam Smith wrote about the cost of the improvement of a worker's skills and dexterity through practice and education, as being like "a capital fixed and realized as it were in his person" that could also be considered part of the capital stock of his country.[5] Smith could see the value of education at first-hand from the example of his own country, Scotland, which had achieved nearly universal literacy by around 1750 (see box VI.1).

This achievement of near-universal literacy 250 years ago by what was a small and poor country, where, however, the costs of primary schooling had been set so low that even a "common labourer" could afford them, can be contrasted with the fact that many countries have still not been able to achieve near-universal literacy (see table VI.1). Of 128 developing countries, only 30 had achieved adult literacy rates of 90 per cent or over in the late 1990s, and 31 had rates of 50 per cent or below, with the average of the latter group being a literacy rate of 37 per cent. The poorer the group of countries, the lower was the literacy rate. Each group of developing countries has made progress since the early 1980s, but the group with the lowest literacy rate is still not able to provide universal primary enrolment, with the improvement having been an increase of only 7 percentage points, from 55.7 to 62.6 per cent. Another group, the one with a literacy rate of between 50 and 70 per cent in 1996, had achieved near-universal primary education by the late 1990s, having increased its enrolment from 88 to 96 per cent. It also made larger gains in extending secondary education than the poorer group. Finally, whereas the developing countries made progress in achieving universal primary education, they lagged far behind the developed countries in secondary education, which is virtually universal in the latter group of countries.

2 For details on the World Education Forum, see http://www2.unesco.org/wef.

3 General Assembly resolution 217 A (III).

4 General Assembly resolution 44/25, annex.

5 "Those talents, as they made a part of his fortune, so do they likewise of that of the society to which he belongs. The improved dexterity of the workman may be considered in the same light as a machine or instrument which abridges labour, and which, though it costs a certain expense, repays that expense with a profit" (Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776-1777, Book II, chap. 1). The whole of this book is on the Internet at http://www.bibliomania.com/NonFiction/Smith/Wealth/index.html.

Box VI.1.

ACHIEVING UNIVERSAL LITERACY IN SCOTLAND

The educational system established in Scotland relied very heavily on the ideas of John Knox, set down in the First Book of Discipline in 1560, that there should be universal education, for rich and poor alike, under penalty of Church censure, and that in a unified system of national schools, a pupil with the requisite ability should be able to attain to the highest positions.[a] This scheme had no equal "for breadth and comprehensiveness among the educational proposals of the period".[b] A pupil could advance from the parish school to one of the three Scottish universities: St. Andrews (founded in 1411), Glasgow (1450) and Aberdeen (1494), which were soon to be joined, in 1584, by Edinburgh.

The purpose of this educational system was related only indirectly, if at all, to development—its goal was to provide an educated ministry and for "the virtuous education and the godly upbringing of the youth of this realm", enabling them, in particular, to read the Bible. Based on Knox's scheme, in 1646 an Education Act was passed that set up a school and appointed a schoolmaster for each parish, under the authority of the presbytery. These schools were to be financed by those who could inherit property in the parish, and who could defray half the expense from their tenants.[c] In 1696, at a time of economic difficulty, the Act was strengthened to ensure that the schoolmaster was paid his stipend or fees.[d]

The success of these parish schools was such that Adam Smith could write in 1770 that they had "taught almost the whole common people to read, and a very great proportion of them to write and account".[e] This was done at a small cost: "For a very small expense, the public can facilitate, can encourage and can even impose upon almost the whole body of the people, the necessity of acquiring those most essential parts of education." Almost universal literacy was achieved with a fairly small amount of formal schooling—often three or four years in school—but sufficient to impart skills that could flourish with subsequent self-improvement.

Economic change in Scotland, during the course of the eighteenth century, gave rise to changes in the educational system. The growing commercial class demanded, and was prepared to pay for, instruction in new subjects—such as mathematics, modern languages and mechanics—rather than Greek, Hebrew and Latin which were needed for the education of the clergy. The satisfaction of this demand led to major changes in institutions and in the syllabus taught.[f]

a John Knox expressed the reasons for supporting the education of the poor, even up to the highest levels, in the following terms: "The children of the poor must be supported and sustained on the charge of the church, till trial is taken whether the spirit of docility is found in them or not. If they are found apt to letters and learning, then may they (we mean neither the sons of the rich, nor yet the sons of the poor) not be permitted to reject learning; but must be charged to continue their study, so that the commonwealth may have some comfort by them." The First Book of Discipline of 1560 can be found at http://www.swrb.com/newslett/actualnls/BOD_ch03.htm.

b William Boyd, *The History of Western Education* (London, Adams and Black, 1950), p. 201.

c For the text of these Acts, see Gordon Donaldson, *Scottish Historical Documents* (Edinburgh and London, Scottish Academic Press, 1970), pp. 213-214 and 263-264. The second Act provided that, when the landowners failed to establish a school, the presbytery could apply to the Commissioners of Supply.

d See Donald J. Withrington, "Education and society in the eighteenth century", in *Scotland in the Age of Improvement*, N. T. Phillipson and Rosalind Mitchison, eds.(Edinburgh, Edinburgh University Press, 1996), p. 171.

e *Wealth of Nations,* …, Book V, chap. 1, part III, article II.

f See Withrington, loc. cit., pp. 184 -188.

A disturbing figure is that the lower the literacy rate, and therefore the greater the effort needed to be devoted to education, the lower was the percentage of gross national product (GNP) devoted to the sector. Moreover, the changes over time in this effort were, on average, small, as measured by shares of GNP allocated to education. In no group did this share come up to the average of the developed countries of over 5 per cent (although in this group of countries, tertiary education tends to be more widespread and so a higher figure could have been expected).

The inability of many developing countries to achieve what some poor European countries achieved over two centuries earlier is especially disturbing in that the history of education has been one characterized by a growing appreciation of the value of education. This has led to the growing role of the State in its provision.

Table VI.1.
PROGRESS IN LITERACY AND EDUCATION IN DEVELOPING COUNTRIES, 1980s TO THE PRESENT

Adult literacy rate 1996 (percentage)	Number of countries	Average adult literacy rate (percentage)	Average GDP per capita 1997 (US dollars)	Average expenditure on education as percentage of GNP		Average gross primary enrolment ratio (percentage)		Average gross secondary enrolment ratio (percentage)	
				1980s	Latest	1980s	Latest	1980s	Latest
50 and below	31	36.8	402	3.2	3.3	55.7	62.6	12.5	17.7
51-69	24	60.2	1 113	4.0	3.8	87.5	96.2	21.2	37.6
70-89	43	79.4	3 612	4.3	4.5	93.6	102.6	41.7	54.4
90 and above	30	93.8	5 446	4.8	4.6	107.5	106.3	60.4	71.0

Source: UN/DESA, based on data of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Bank.

Historical efforts to achieve high education standards

Governments have been involved in raising the educational attainment of their citizens for centuries. Running a State has always required the formation of an educated elite which might or might not coincide with the aristocracy. China, one of the first unitary States in the world with a joint Government, language and culture, was recruiting bureaucrats on the basis of meritocracy—rather than hereditary aristocracy—as early as the Han dynasty (206 BC-220 AD). Recruitment examinations were instituted in the seventh century and improved under the Tang (618-906 AD) and Sung (960-1127 AD) dynasties. These examinations provided a stimulus to the pursuit of education, a phenomenon often referred to as reflecting the emphasis on education in a Confucian culture.[6]

Particularly during the last quarter of the nineteenth and the early parts of the twentieth century, many Governments expanded and formalized their role in the provision of education. Governments were concerned about the moral habits of the uneducated and feared public disorders during a time of rapid urbanization and industrialization and paltry living conditions in many cities. "An educated population, it was hoped, would be God-fearing, industrious and respectful of the law."[7] Education was the first of the social services to which Governments devoted attention and finance on a large scale. Among the earliest to have done so was the Government of Prussia, which under King Frederick the Great placed great emphasis on education: in 1763, it made attendance at school compulsory for all children from 5 to 14 years of age, under penalty of a fine. The defeat of Prussia by Napoleon in 1806 led to an intense effort at national revival, including a major push for education: 80 per cent of children were attending school in 1833. In the United States of America, education was seen as essential to guarantee the success of the new democracy. The Government had committed itself to the principle of free education as early as 1785 when it disposed of lands in the Western Territory and reserved a section of each congressional township for the support of schools. The third article of the Northwest Ordinance of 1787 recognized that "religion, morality, and knowledge being necessary to good government and the happiness of mankind,

6 See A. Maddison, *Chinese Economic Performance in the Long Run* (Paris, OECD Development Centre, 1998).

7 See P. Thane, *The Foundations of the Welfare State* (London, Longman, 1982), p. 40.

schools and the means of education shall always be encouraged". As a result of these acts, each township was expected to have a school. Free education was available for almost everybody in the United States at the end of the nineteenth century, the major exception being the black population.

In England and Wales, the Government first subsidized private schools (often church schools) and after 1833 put them under public supervision.[8] Elementary education became compulsory in 1880 and free in 1891. Nearly universal literacy was achieved in England by 1900, a feat that, as previously mentioned, Scotland had achieved in around 1760.[9] A similar process took place in France where elementary education became free in 1881 and compulsory until age 14 in 1882.

Frequently, concerns about morality and public order also impelled colonial powers to provide education in their colonies. Colonizers often felt the need to teach the colonized the language and religion of the colonizers and make them loyal subjects. In addition, primary education was often provided by missionaries, mostly on a small scale. In sum, these efforts were often haphazard and limited to primary education. However, the need to have an educated civil service was always present, and led to the formation of institutes of higher education in many colonies or to arrangements for a few educated people from the colonies to attend universities in the metropolitan country. At independence, one of the first priorities of the Government was often to expand educational opportunities and eliminate the educational deficit left by colonialism. In India, primary schools especially experienced rapid growth after independence to fulfil the constitutional directive of providing universal, free and compulsory education for all children up to age 14.[10]

Whereas early government involvement in the provision of education was largely based on concerns about social values and attitudes, the crucial role of education in economic development gained wider acceptance among Governments in the second half of the nineteenth century.[11] Germany was the first country to recognize explicitly the key role of technical education and research as instruments for economic progress, and in particular as a means to bridge the gap made evident by comparison with Great Britain. For example, the first publicly financed agricultural research institute was established in Germany in 1852. The leading role given to education by Germany was emulated by the United States, especially in agriculture, and by Japan.

During the Meiji period in Japan (1868-1912), emphasis was put on the introduction of Western technology and education systems. Although the Meiji reforms built on the progress made during the Tokugawa period, the expansion of the education system was impressive. A department of education was established in 1871, school laws were adopted in 1872 and four years of education were made compulsory in 1886. Between 1868 and 1910, enrolment of 5- to 19 year-olds increased from 10 to 84 per cent and the literacy rate jumped from 30 to 70 per cent. Vocational education was further developed and agricultural schools, research institutes and universities were established. The increase in the years of education per person aged 15 to 64 was even more remarkable. Between 1820 and 1870, the figure had stagnated at a meagre 1.5 years. It increased to 5.4 years in 1913 and reached 9.1 years in 1950, which was about the same number of years as in several European countries and about 2 years less than in the United States. Yet, by comparison, gross domestic product

8 It should be noted that the 1707 Act of Union between England and Scotland still left Scotland with its separate Church, legal system and educational system.

9 It has been argued that, prior to 1862, in England "it never occurred to anyone (of the classical economists) to relate the quantity and quality of schooling directly to a country's economic performance". The exception was John Stuart Mill. See Mark Blaug, *Economic History and the History of Economics* (New York, New York University Press, 1986), pp. 174-176. It is noteworthy that the increase in literacy in England in particular was, to a considerable extent, a result of out-of-school education.

10 The Indian Constitution stated: "The State shall endeavour to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years."

11 See Blaug, op. cit., p. 172.

(GDP) per capita in Japan was only about one third of the Western European average.[12] As in the case of Scotland, the fast and substantial increase of educational attainment in Japan preceded the rapid increase in GDP per capita.

Recent economic analysis of the link between education and growth

The close connection between economic performance and educational attainments has led to the formalization and popularization of the concept of human capital in expositions on economic growth and development.[13] Human capital formation was given a prominent place in studies of the economic "miracles" that had taken place in the East Asian newly industrializing economies. One of the factors identified as having enabled the rapid growth of these economies was the emphasis in their cultures on education which had resulted in a well-educated labour force.

The findings of microeconomic studies support the notion of there being a positive relationship between investment in education and productivity, although the rate of return to education varies from country to country.[14] The empirical literature on the financial rate of return to education at the individual level is very rich, including studies of industrialized as well as developing countries. However, if the labour market is less competitive or workers engage in non-wage-paying activities such as self-employment, as is often the case in developing countries, it is preferable to use physical measures of output rather than earnings to measure the effects of better education on labour productivity. Studies analysing the relationship between education and physical measures of productivity in low-income countries have concluded, for example, that farmers having some years of education are more productive than those with no education, with the increase in agricultural productivity being greater when improved farm techniques and complementary inputs are available to all farmers.[15]

The reason for the positive relationship between education and economic growth is twofold.[16] Education directly contributes to economic growth owing to improvement in a country's human capital stock (a component of the production function) and the enhancement of labour productivity. There is also a positive feedback from economic growth to education. Economic growth allows more investment in education (thus increasing the supply of education) and it also increases the demand for educated labour, which serves as a stimulus to public and private investment in education. In Botswana, the fruits of economic growth, coming through the development of a mineral industry, were used to foster education and subsequent economic advance (see box VI.2).

THE PRIMACY OF PRIMARY EDUCATION

As expenditure on education can be seen as an investment, the question is, Where should developing countries, especially the least developed, which are characterized by poor human capital endowment, low levels of income and limited public resources, concentrate their resources in order to build up the necessary human capital for economic growth to take place?

The earlier review showed that the first level that can assure universal literacy is fundamental. Without primary education, children will not be able to go on to higher levels. Thus, for countries facing binding constraints on the

12 See Angus Maddison, *Monitoring the World Economy* (Paris, OECD Development Centre, 1995).

13 Human capital theory was initially a model of earnings determination. See G. S. Becker, *Human Capital: A Theoretical and Eempirical Analysis with Special Reference to Education, 3rd ed.* (Chicago, University of Chicago Press, 1993); and also, J. Mincer, *Schooling, Experience and Earnings* (New York, Columbia University Press, 1974). The theory has since been applied to growth models.

14 These studies are based on a neoclassical theoretical foundation that equates factor income with its marginal productivity. Therefore, higher wage rates paid to better-educated workers are interpreted as evidence of greater productivity of these workers. Human capital refers to education because other aspects of human capital are difficult to measure directly.

15 See M. E. Lockheed, D. T. Jamison and L. J. Lau, "Farmer education and farm efficiency: a survey", in *Education and Income,* T. King, ed., World Bank Staff Working Paper,no. 402 (Washington, D.C., World Bank, 1980); D. T. Jamison and L. J. Lau, *Farmer Education and Farm Efficiency* (Baltimore, Maryland, Johns Hopkins University Press, 1982); and D. T. Jamison and P. R. Moock, "Farmer education and farm efficiency in Nepal: the role of schooling, extension services, and cognitive skills", *World Development,* vol. 12, No. 1 (January 1984), pp. 67-86.

16 For recent work on human resources and growth, see, for example, D. Wheeler, *Human Resource Development and Economic Growth in Developing Countries: A Simultaneous Model,* World Bank Staff Working Paper, No. 407 (Washington, D.C., World Bank, 1980); R. Barro, "Economic growth in a cross section of countries", *Quarterly Journal of Economics,* vol. 105, No. 2 (May 1991), pp. 407-443; and J. Benhabib and M.M. Spiegel, "The role of human capital in economic development: evidence from aggregate cross country data", *Journal of Monetary Economics,* vol. 34 (1994), pp. 143-174.

Box VI.2.

BOTSWANA: THE VIRTUOUS CIRCLE OF GROWTH AND EDUCATION

The case of Botswana demonstrates how a very poor country capitalized on its political stability and determination to create a favourable investment climate so as to turn a poor and largely uneducated population into a comparatively wealthy and well-educated population.

At independence in 1966, Botswana had been one of the world's poorest countries and was among the first group of countries identified as least developed by the Committee for Development Planning in 1971. However, its traditional ruler, the Khama, had unquestioned political legitimacy and always worked through the process of consultation achieved in the *kgotla* meetings.[a] At independence, Botswana still preserved its traditional consultative institutions. Sir Seretse Khama, the traditional leader of the Bamangwato, renounced his chieftainship and moved into the political arena: he was elected President, and set the tone for full commitment to democratic processes from which the country has never veered. Moreover, Botswana set out to be a safe haven for investors and to provide an enabling environment to the private sector, including foreign business interests.[b]

The basis for Botswana's success was laid well before independence. In 1955, De Beers, part of the Anglo-American Corporation of South Africa group, began to prospect for diamonds. In 1959, after three years of negotiation, conducted in an "atmosphere of frankness and simplicity" by representatives who were "far-seeing and statesmanlike"[c] the Bamangwato concluded an agreement with Roan Selection Trust of Zambia to prospect for minerals. Copper and nickel were found at Selebi-Phikwe in 1963, with a public announcement of the discovery being made in 1967. The goodwill and mutual trust generated throughout the long negotiations enabled the shareholders in the project to put together a capital sum equal to the gross domestic product (GDP) of Botswana at that time.[d] Botswana let the major corporate investors—principally the Anglo American Corporation and American Metal Climax (AMAX) (which absorbed Roan Selection Trust after its properties had been nationalized by the Zambian Government in 1969) - bear all the risks, and, as it happened, the project was not a success compared with the diamond industry.

Diamonds had been discovered in Orapa in 1967 and production began in 1971. More diamonds were discovered at Jwaneng in 1975. By 1987, diamonds made up 85 per cent of Botswana's total exports. The growth of the mineral industry and prudent economic policy ensured that the country experienced a period of fast growth from 1965 to 1985: it recorded the highest gross national product (GNP) per capita growth in the world, and fulfilled the hopes of the Government and of its foreign business partners. The mining sector's share in GDP rose from 1.6 per cent in 1967/68 to 46.9 per cent in 1985/86 and in government revenues from 0 to 53.2 per cent in the same period.[e]

Education played an important role in the country's subsequent economic progress and diversification. Financing education was made possible by the success of the mineral industry. Even though the gross primary enrolment ratio was above 50 per cent in Botswana at independence, compared with the 37 per cent average in the rest of the low-income sub-Saharan African countries, the quality of primary education was poor. Class size was very large, the repetition rate was high, at about 20 per cent, and about half of the teachers were untrained. Moreover, there were very limited opportunities for secondary or tertiary training in the country.

[a] Every village in Botswana has a public meeting place, known as the *kgotla*.

[b] This is reflected in the following statements: "Private enterprise will only be interested in investing in Botswana if there is a profit to be made … and if they are allowed to export their profits if they wish to do so" (Transition Plan 1966): and "The best way to stimulate the creation of opportunities (for Botswana) is to provide incentives and support to the private sector; the Government's own activities must not starve the private sector of resources" (National Development Plan 1985), as cited in Charles Harvey and Stephen R. Lewis, *Policy Choice and Development Performance in Botswana* (New York, St. Martin's Press, 1990), p. 168.

[c] Remarks of Sir Ronald Prain, Chairman of Roan (at that time Rhodesian) Selection Trust ("Agreement with the Bamangwato Tribe: Address to the Bamangwato Tribal Council, Serowe, June 2, 1959", in *Selected Papers, Volume II, 1958-1960* (London, Rhodesian Selection Trust Group, 1961, pp. 68-69). The consultative nature of the political process in the Bamangwato tribe was evidenced by the fact that this ceremony was attended by some 40 councillors, many of whom had travelled on foot to attend.

[d] From a speech to be delivered by Sir Ronald Prain, Chairman, Botswana RST Limited, at a dinner in Gaborone, 7 March 1972, mimeograph. Sir Ronald described how he knew of "no mining project where such large sums have been committed and spent before an assurance of ultimate financial involvement".

[e] Figures from Harvey and Lewis, op. cit., p. 110.

Box II.2 (continued)

Botswana had 40 university graduates and about 100 persons with a secondary school certificate in 1966.

Botswana's traditional consultative mechanisms ensured that development would not concentrate on the urban elite, but would take into account the need to help the rural areas.[f] This was reflected in the priorities given to primary education, basic health care and improved transport and communications in rural areas. The Government set universal access to primary education as a goal and committed large amounts of public resource to education. In 1970, 5.2 per cent of GNP (or 12.3 per cent of total government expenditure) was invested in education, of which almost 60 per cent was devoted to primary education. During the 1970s, the share of GNP invested in education increased to about 8 per cent. By 1980, the gross primary enrolment ratio had reached 102 per cent. The Government continued to spend about 8 per cent of GNP or 15 per cent of total government expenditure on education through the 1980s. However, the emphasis shifted to secondary and higher education as the goal of universal primary education had been achieved. The combined share of secondary and tertiary education in total educational expenditure had increased from about 40 to 61 per cent by 1991, the last year for which information was available. In 1997, total public expenditure on education as a share of GNP increased further, to 8.7 per cent.

Investment in the education of its people paid off in a high rate of economic growth. Compared with other sub-Saharan African countries, Botswana has been more successful at taking advantage of its mineral resources while also diversifying its economy into non-mining activities, a process that has been aided by the improvement in the country's stock of human capital. Combined with the country's stable political democracy, an educated labour force has attracted foreign investment. For example, the Republic of Korea automobile manufacturer Hyundai set up a factory in Botswana, its third in Southern Africa (the other two are in South Africa). The educational system has provided the civil service with qualified personnel who are responsible for the crafting and implementation of national economic policies and strategies. Botswana is so far the only country that has graduated from the list of least developed countries.

[f] See Harvey and Lewis, op. cit., p. 10.

resources that they plan to invest in education in order to escape the poverty trap, focusing public investment on primary education would likely generate higher returns and lay the foundation for secondary and tertiary education. Moreover, primary-level education typically costs less per person than education at higher levels.

A labour force equipped with a basic education from a high-quality primary level helps meet the challenges of industrial development and economic diversification, the first step in structural change that often symbolizes economic take-off. Developing countries that have succeeded in achieving high rates of economic growth, such as the Asian economies and those that came afterwards, launched their economic take-off on a platform of labour-intensive, export-oriented industries. This was well illustrated in the case of the Republic of Korea (see box VI.3). Technological upgrading came at a later date in their success story. This pattern results from the cumulative nature of technological change which makes it difficult for latecomers to compete with established leaders at

Box VI.3.

EDUCATION LAYS THE FOUNDATION FOR SUSTAINED GROWTH IN THE REPUBLIC OF KOREA

Education played an essential role in the Republic of Korea's post-independence long-term growth strategy.[a] Progress in providing primary education was very rapid between 1945 and 1961, the year the economy started to take off. Although some progress had been made in education during the colonial period, in 1945, when independence was achieved, illiteracy was still high, at 78 per cent, and only 13 per cent of adults had received any formal schooling. After 1945, enrolment rates increased sharply, especially in primary schools. In 1953, sixty per cent of children from 6 to 11 years of age were enrolled in school. The rate increased to 86 per cent by 1960 and nearly universal elementary education was achieved in 1964. As a result, the illiteracy rate dropped to 28 per cent in 1960. Thus, the Republic of Korea reduced the illiteracy rate by 50 percentage points and increased primary school enrolment rates by nearly 40 percentage points in about two decades. These levels of educational attainment exceeded the levels in countries at similar levels of gross domestic product (GDP) per capita.

The increase in primary enrolment between 1945 and 1965, which amounted to 3.5 million pupils, was made possible by large investments in schools. A large share of these investments was financed by the United States Army and by foreign aid, which allowed government expenditures on education to remain at relatively modest levels. Public expenditures on education amounted to only 0.9 per cent of gross national product (GNP) in 1954 and 2.5 per cent of GNP in 1960. A high share of these expenditures was devoted to primary education. Moreover, parents have always born a substantial share of the costs of education.

After 1960, the rise in educational attainment continued. By some measures, the rate was among the fastest the world had ever seen. Between 1950 and 1992, 10 years of schooling on average were applied to a person of working age. Adult literacy increased from 22 per cent in 1945 to 97 per cent in 1997. The quality of education rose as well, as measured by such indicators as cognitive skills. This performance is similar to what occurred in other economies in East Asia but is in contrast to the performance of many other developing countries where the quantity and quality of education have diverged. The high quality of education is highlighted by comparisons of international test scores: in recent years, students of the Republic of Korea have ranked at the top in mathematics and science (often ahead of students in many developed countries). In general, the quality of education can help explain the high returns to educational investment.[b]

As indicators of the increase in resources devoted to education, in primary education, the pupil-to-teacher ratio fell from 58 in 1960 to 36 in 1990 and the real spending per child increased more than five times over the same period. However, both these input indicators are not exceptional compared with those of other developing countries. The areas where the Republic of Korea stood out were in higher teacher salaries, low repetition rates and low drop-out rates. Salaries for teachers, for example, have always been high relative to those of other developing countries and to those of other professions in the Republic of Korea.

Having achieved its targets in primary education, beginning in the mid-1970s the Government shifted the focus of public educational expenditure from primary to

[a] See, for example, Jong Wha Lee, "Economic growth and human development in the Republic of Korea, 1945-92", *Occasional Papers,* No. 24 (New York, Human Development Report Office, 1996); A. H. Amsden, *Asia's Next Giant: South Korea and Late Industrialization* (New York, Oxford University Press, 1989); Francis Green and others, "The role of the state in skill formation: evidence from the Republic of Korea, Singapore, and Taiwan", *Oxford Review of Economic Policy,* vol. 15, No. 1 (spring 1999), pp. 82-96; and Chung H. Lee, "Institutions and economic development", in: *Growth and Competition in the New Global Economy,* U. Hiemenz, ed. (Paris, OECD Development Centre, 1999).

[b] See, for example, R. Sabot, "Human capital accumulation and development strategy", in *Development Strategy and Management of the Market Economy,* vol. II, I. P. Székely and R. Sabot, eds. (Oxford, Clarendon Press on behalf of the United Nations, 1997), pp. 149-195. In Ghana, the quality of education is a problem to such an extent that conventional estimates of the returns to years of schooling appear to be zero. However, when mathematics and reading ability are taken into account, returns become positive (see P. Glewwe, "The relevance of standard estimates of rates of return to schooling for education policy: a critical assessment", *Journal of Development Economics,* vol. 51, No. 2 (December 1996), pp. 267-290; and V. Lavy, "School supply constraints and children's educational outcomes in rural Ghana", *Journal of Development Economics,* vol. 51, No. 2 (December 1996), pp. 291-314).

Box VI.3 (continued)

secondary and tertiary education. The share of secondary education in total public educational expenditure rose from about 25 to over 36 per cent between 1975 and 1995. The share of tertiary education oscillated in the range of 8 to 12 per cent. A larger portion of the costs of tertiary education, compared with other levels of education, is borne by the individual yet the enrolment ratio at the tertiary level had increased from 34 per cent in 1985 to what is, by international standards, the extremely high level of 68 per cent in 1997. This change in priority suited the technological upgrading of the economy of the Republic of Korea by providing workers with the higher levels of education demanded by expanding industries.

After laying the foundations for growth through primary education, the Republic of Korea saw the virtuous circle develop between education and growth. Growth in the 1960s and 1970s created demand for labour with a basic education. The availability of jobs with good salaries provided the incentives to enhance education levels. In the 1970s, high school graduates, for example, earned about 50 per cent more than workers with only primary school education. Graduates of a junior college earned about two times as much and graduates of colleges and universities about four times as much, as workers with primary school education. These earning gaps narrowed in the 1980s but real wages continued to grow. When the Republic of Korea shifted to more skills-intensive exports in the 1970s, the demand for skills increased accordingly. By the Vocational Training Law, enacted in 1967, the Government established 26 training institutes. These institutes had trained 350,000 workers by 1986. The Government also encouraged training within firms through a system of subsidies and penalties. However, in the 1980s, doubts were increasingly raised about the system's effectiveness.[c] The school system was also changed as more support was given to colleges and universities in the 1980s; this entailed a shift from the emphasis of the 1960s and 1970s on vocational training and secondary schools. In sum, the export-orientation of the economy of the Republic of Korea, which required an ability to adjust to rapidly changing conditions and competitive pressures, demanded and rewarded education.

There is consensus that education made an important contribution to the development success of the Republic of Korea: one study concluded that about 8 per cent of the growth of GDP between 1963 and 1990 could be explained solely by the advances in education.[d] A diversity of opinions exist, however, on the precise mechanism through which education contributed to development.[v] Some have argued that the role of education was largely restricted to screening, socialization, the enhancement of discipline and moral behaviour and assisting the Government in its modernization policies. Others have emphasized the positive effect of education on encouraging and increasing the returns to investment in physical capital through the identification of new business opportunities and the adoption and invention of new technologies. Whatever the precise mechanism, there is little doubt that the substantial investments made by the Republic of Korea in its educational sector more than paid off and that, without them, the country could not have attained its present high living standards.

c See Amsden, op. cit., p. 223; and Green and others, loc. cit., p. 92.

d See D. Pilat, *The Economics of Rapid Growth: The Experience of Japan and Korea* (Aldershot, United Kingdom, and Northampton, Massachusetts, Edward Elgar, 1994), pp. 85 and 90-91.

e See Amsden op. cit., p. 219; Lee, loc. cit., pp. 18-20; and R. R. Nelson and H. Pack, "The Asian miracle and modern growth theory", *The Economic Journal,* vol. 109, No. 457 (July 1999), pp. 416-436.

the frontier of technology. In other words, technological leapfrogging is hard to accomplish without some strong foundation, provided by the success of primary education, from which to jump.

Poverty traps and thresholds in education

Moreover, the positive feedback between economic growth and educational advance points to the possibility of poverty traps and a threshold level (or critical mass) of educational attainment that, once reached, allows growth to take off. Until this threshold is reached, however, investment in education is not seen to pay off. A study for Brazil found, for example, that a threshold existed when the amount of formal education per person of the labour force had reached three to four years—admittedly, not a large figure.[17] Thresholds imply that the effects of education on output are small before a critical mass of education is achieved yet, when the critical mass is reached, education gives a significant boost to economic growth. Given the existence of thresholds, substantial efforts to improve educational systems are required before the positive effects of education on growth can be seen. Governments need to make a considerable effort over an extended period of time to enhance education before a take-off in development can be expected.

Table VI.2 gives some evidence for these thresholds. It shows a clear correlation between income per head and the gross primary school enrolment ratio. The average income of the 24 countries with an enrolment ratio of between 70 and 90 per cent was eight times that of the 21 countries with a ratio below 70 per cent, but only three quarters of that of the 67 countries with an enrolment ratio of over 90 per cent. Once a fairly high level of secondary education cov-

17 See L. Lau and others, "Education and economic growth: some cross-sectional evidence from Brazil", *Journal of Development Economics,* vol. 41, No. 1 (June 1993), pp. 45-70. See also J.E. Taylor and A. Yúnez-Naude, *Education, Migration and Productivity: An Analytical Approach and Evidence from Rural Mexico* (Paris, OECD Development Centre, 1999), p. 20. It could be noted that five or six years was about the minimum recommended over 400 years ago for Scotland: "Two years we think more than sufficient to learn to read perfectly, to answer to the catechism, and to have some entry in the first rudiments of grammar; to the full accomplishment whereof (we mean of the grammar) we think another three or four years, at most, sufficient" (First Book of Discipline).

Table VI.2.
LOW LEVELS OF EDUCATION AND THE POVERTY TRAP

	Number of developing countries	Gross primary enrolment ratio (average)	Average GDP per capita (United States dollars)
Gross enrolment ratio			
Below 70 per cent	21	50.2	342
Between 71 per cent and 90 per cent	24	80.6	2 746
Above 90 per cent	67	108.5	3 541
	Number of developing countries	Secondary enrolment (average ratio)	Average GDP per capita
Gross enrolment ratio			
Below 40 per cent	53	20.6	558
Between 41 per cent and 60 per cent	18	52.2	1 392
Above 60 per cent	41	76.0	6 237

Source: UN/DESA, based on data of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Bank.

erage had been reached—60 per cent—this further improvement was associated with a much greater increase in income per head.

The necessity of emphasizing education, especially primary education, as a foremost priority for a developing country wishing to achieve sustained growth is also confirmed by the evidence that there has not been one single developing country that reached a sustainable growth path over the long term by first emphasizing economic growth while ignoring the accumulation of human capital.[18] In fact, all countries that emphasized growth over human development reverted to a vicious circle of slow growth and low accumulation of human capital.

[18] See Gustav Ranis, Frances Stewart and Alejandro Ramirez, "Economic growth and human development", *World Development,* vol. 28, No. 2 (February 2000), pp. 197-219.

Virtuous and vicious circles in education

The success of East Asian economies illustrates the existence of a virtuous circle between education and growth. Economic growth raised income levels and the demand for educated workers, which in turn boosted both the supply of and demand for education. As industrialization deepened and the economy gradually climbed up the technological ladder, demand for workers with secondary and tertiary education increased. At this later stage, demand played a more important role in generating and allocating investment in education among different levels, completing a virtuous circle of: well-educated labour force - high rate of economic growth - improvement in human capital.

The last-mentioned point is vital, and shows that concentration should not be focused solely on primary education and that policies aimed at secondary and tertiary education should also be designed, for the expansion of each level of education requires the expansion in size and quality of the level above it, with the aim being for each student to be educated up to his or her full potential. This point had been apparent over 300 years ago to educational pioneers who realized that someone had to teach the teachers, but was frequently missed even a few decades ago by the providers of advice on educational policy who argued that tertiary education was elitist.

Another reason for a virtuous circle between economic growth and education is that in a growing economy, tax revenues are increasing, providing the resources required in order for the Government to invest in education and to improve its quality. Personal and household income also tends to rise in a growing economy, enabling families to increase their investment in the education of their children. Economic growth thus provides the incentives and the finance for educational enhancements.

Similar virtuous circles exist with regard to educational attainments. The higher the level of education of others, the more the individual can benefit from his or her own education, and the more he or she is inclined to strive for more education. An educated society demands goods and, particularly, services that educated people can supply. Thus, the private returns to education depend on the levels of education of others.

The opposite of the virtuous circle is the low-level equilibrium trap where low overall levels of educational attainment provide too few incentives to acquire more education.[19] For example, why should an individual acquire the knowledge to produce a new good or service, when no one will be able to read the instructions needed to use it or the advertisements put out to promote it.

[19] See, for example, C. Azariadis and A. Drazen, "Threshold externalities in economic development", *The Quarterly Journal of Economics,* vol. 105, No. 2 (May 1990), pp. 501-526.

Similarly, in a poor and slowly growing economy that is generating few jobs, the private returns to education might not be large enough to encourage parents to send their children to school and acquire skills.[20] Thus, a vicious circle can be created whereby children do not obtain sufficient education because the economy is stagnant and the economy is stagnant because educational levels are too low.

[20] See, for example, R. B. Freeman and D. L. Lindauer, "Why not Africa?", *NBER Working Paper,* No. 6942 (Cambridge, Massachusetts, NBER, February 1999).

Education and income distribution

This possibility of a vicious circle is increased if income inequality is high and has a negative effect on education and on economic growth. Greater initial income equality enhances economic growth because it contributes to political and macroeconomic stability: there is less dispute over claims to a share in national output and Governments can focus on devising and implementing policies, public expenditures (including those for promoting education) and taxation that enlarge output.[21]

Through its effect on the demand for education, income distribution affects economic growth. Poor people do not have enough cash and lack the assets to acquire loans to pay for education. Greater income equality will therefore enhance the income of poor people and alleviate the liquidity constraints that they face. If poor people have the financial means, and if they see the potential returns as being large, they will make substantial investments for themselves and their children in such areas as education. If there are appropriately high-paying jobs available for those with higher levels of education, poor households will reduce consumption and increase work effort in order to pay for more education. Thus, greater equality in income and asset distributions reduces the liquidity and credit constraints on poor households and encourages greater investment in education. However, in conditions of extreme poverty, there is almost no incentive great enough to encourage a family to take out a loan to finance education. The family is too concerned about obtaining the maximum income from the work of all its members in order to survive. It is doubly important that education for these poorest and most disadvantaged members of society be absolutely free at the point of delivery.

[21] See, for example, N. Birdsall and J.L. Londono, "Asset inequality matters: an assessment of the World Bank's approach to poverty reduction", *The American Economic Review,* vol. 87, No. 2 (May 1997), pp. 31-37; and R. Sabot, "Human capital accumulation and development strategy", in *Development Strategy and Management of the Market Economy,* vol. II, I. P. Székely and R, Sabot, eds. (Oxford, Clarendon Press on behalf of the United Nations, 1997).

Income distribution can also have an important effect on the supply of education. In more equitable societies, it is more likely that the Government will devote an appropriately large share of its resources to primary and secondary education and not, at least initially, concentrate resources on university education, which benefits only a small group. This has been an important consideration, for example, in Botswana, Costa Rica (see box VI.4), the Republic of Korea and Taiwan Province of China. The high levels of income equality in the two Asian economies, which were partly a result of the extensive land reforms in the 1950s, resulted in the wide sharing of the fruits of economic growth. This meant that even the poorest households could afford to pay for the education of their children. (Households paid at least 63 per cent of educational expenditures in the Republic of Korea between 1968 and 1990.) Moreover, the destruction of the old class system after the Second World War and the Korean War made education the most important vehicle for social mobility. This also geared the Government initially towards ensuring the provision of primary and secondary education rather than of university education for a small group: the

Box VI.4.

COSTA RICA: THE COUNTRY'S COMMITMENT TO EDUCATION

In Costa Rica, over a long period, Government made a deliberate effort to raise the level of education in the country, which in turn helped to sustain long-term economic growth.

As early as 1869 (three decades after the country had achieved independence (in (1838)), a revision to the Constitution made "primary education for both sexes obligatory, free, and at the cost of the Nation". An educated population, combined with freedom of the press, helped defeat militarism in Costa Rica: the educated masses ensured that the elite did not try to exclude them from the political process, while the elite found that orderly democratic change was in their own business interests. However, the Depression of the 1930s revealed the weaknesses in old-fashioned paternalism and Costa Rica endured a Civil War in 1948 as a result of a disputed election. The 1949 Constitution introduced suffrage for women and full citizenship for all, outlawed a standing army, imposed presidential-term limits and created an independent electoral tribunal.

Access to education by the rural population had been limited before the Civil War, but Government investment in education and educational attainments rose rapidly after the 1948 revolution. The Government of the Partido de Liberación Nacional (PLN) accorded first priority to expanding the coverage of primary education. By 1960, the gross primary enrolment ratio had reached almost 93 per cent. Complete coverage at the primary level was achieved in the early 1960s. Economic growth also accelerated: gross domestic product (GDP) expanded at about 9 per cent per annum during the first half of the 1950s.

With universal primary school enrolment having been achieved, secondary education received more emphasis during the 1970s: the enrolment ratio increased by more than two thirds during the decade to reach 39.7 per cent by 1980. Higher education also expanded in this period, the number of students enrolled equalling 21.4 per cent of the population aged 17-21. To achieve this progress, the Government had invested 5.5 per cent of total GDP in 1975 for education at various levels (2.6 per cent for primary education, 1.4 per cent for secondary education, 1.3 for higher education and 0.2 per cent for vocational training).[a]

Investment in education paid off in the high rate of economic growth in the 30 years prior to the onset of the debt crisis of the 1980s. The fiscal consolidation brought about by the debt crisis and subsequent economic recession forced Governments in the region to cut back public spending. Costa Rica reduced public expenditure in education and health, but maintained its effort to increase the coverage of primary education. The average educational attainment of new graduates declined during the crisis years, as total public spending on education fell below its 1975 level. In the mid-1980s, the share of public educational outlays in total gross national product (GNP) dropped to 4.5 per cent, recovering so as to reach its pre-crisis level only by the late 1990s. In 1997, the Constitution was amended so that, by article 78, public expenditure on education was set at a minimum of 6 per cent of GDP.

These renewed efforts to improve education in the country in the 1990s placed greater emphasis on secondary and higher education. By 1998, the gross primary enrolment rate had risen to 104 per cent, secondary enrolment had increased to 49 from 40 per cent in 1985 and tertiary enrolment had gone up from 22 to 30 per cent over the same period. This investment, and the political and investment stability provided by the country's strong democratic traditions, also played an important role in attracting foreign investment in the 1990s. A number of foreign high-technology companies invested in the country's information technology sector.

The latest government effort is to steer the educational system towards meeting the demand of high-technology industries. This strategy fits an emerging pattern among the more successful developing countries: focus on primary education first so as to build up the threshold level of human capital for economic take-off, then allow industry's demands to play a greater role.

a *Costa Rica: Public Sector Social Spending,* World Bank report, No. 8519-CR, (Washington, D.C., World Bank, 23 October 1990), p. 46.

Republic of Korea devoted a very high share of the education budget to primary education, for example, 64 per cent in 1970. Yet later on, it certainly did not neglect the higher sectors: tertiary enrolment rose from 7 per cent in 1970 to 68 per cent in 1997, a higher rate than in many developed economies. Higher-education levels, however, do not necessarily lead to greater income inequality in the long term, for the wage premium for educated workers declines over time as more workers become educated.

Public investment in education

As the nation as a whole gains from investment in education, the provision of education has long been one of the main activities of Governments. It is a function that has acquired ever-greater importance over time, as the functioning of a modern society requires a continual increase in educational standards. Moreover, parents have continually demanded that their children be provided with high-quality education and that the Government set aside the resources to achieve this. As shown in table VI.1, the higher the income per head, the higher the percentage of GNP is devoted to education: a virtuous circle is created whereby those who are educated to a high level insist that adequate resources be devoted to this sector so as to provide an even higher level for their children. Governments have both required parents to send their children to school to achieve a minimum level of education and used tax revenues to make this education absolutely free at the point of delivery.

One of the reasons for the nation as a whole to gain is that education has significant positive externalities: the education of one person benefits others as well, whether it is the family, neighbours, colleagues or employers. Through interpersonal interactions that facilitate individual learning, one person's education can positively influence others around him or her. The external effects of education for women are particularly large as higher female educational levels reduce fertility and child mortality rates, increase the likelihood that their children will attend school and improve the nutritional status of the family. Education also promotes a more equal distribution of income by facilitating the social and professional mobility of the educated, and there is evidence that greater income equality promotes economic growth. In sum, the total long-term social benefits from education are greater than the sum of the benefits to individuals. Thus, if left to the free market, investment in education would be suboptimal, resulting in a lower-than-justified supply. Public investment or a subsidy from public funds is needed to expand total investment to the socially optimal level. There is also the traditional argument for State intervention: that better education expands human capabilities, including the capability to serve the State and advance its interests. In respect of primary education, there is now no question that this should be universal and absolutely free at the point of delivery.

Public investment required for an educational system often takes the form of the physical infrastructures that constitute the "hardware" of educational systems, such as school buildings. The training of personnel also requires public investment in the form of public contributions to training institutions.

Although public resources typically finance a large portion of total educational costs, the amount of resources that it absorbs is not always an accurate

measure of the quality of an educational system. Countries have reached different levels of the enrolment ratio and literacy rates with similar monetary investments in education, and have achieved better results in terms of output indicators such as test scores with the same or even smaller financial outlays.[22] The Republic of Korea is one example of a country obtaining substantial results from its educational investment (see box VI.3). External aid is another source of funding for education. However, external aid to education amounts to less than 10 per cent of the total education budget in developing countries, although it is an important source of capital investment in poor countries. Moreover, much external aid for education comes in the form of loans for capital investment. It does not cover the recurrent costs on such items as facility maintenance, administrative costs and teacher salaries which are needed to keep in operation the new educational facilities. The volume of such recurrent expenditures greatly affects the quality of education.

[22] For a discussion of how the quality of education actually delivered is not necessarily related to the proportion of GNP devoted to the sector, see R. Sabot, op. cit.

Encouraging private investment in education

Government support for the educational system at all levels is crucial. However, a supportive role can be played by private resources. Investment in education is a sound investment for the individual, as the result is higher lifetime earnings and other non-monetary benefits. This is one reason why private resources can contribute to total expenditure at, in particular, the tertiary level. As greater employment opportunities for better-educated workers act as stimulants to private demand for education, a development strategy that generates demand for educated labour will also stimulate private investment in education.

The educational costs borne by individuals and their families are not just direct costs, such as for tuition and books: the opportunity costs such as earnings forgone in the course of education are substantial. In more mature market economies, the credit market is often used to finance private investment in education, especially higher education, providing the individual with the means to pay for his or her education in the expectation of repayment from future earnings. In most developing countries, however, the role of credit finance for financing education is very limited. Either the credit market itself is not developed, or the poor who most need such finance do not have access to it, owing to a lack of collateral or the high credit risk associated with their low social and economic status. Even in mature industrialized countries, the private credit market does not provide adequate lending to the poor. Therefore, Governments in developing countries need to intervene in this area to facilitate access to credit by the poor in order to increase their demand for education.[23]

[23] For a fuller analysis of the need to provide credit to the poor, see *World Economic and Social Survey, 1999* (United Nations publication, Sales No. E.99.II.C.1), chap. VII entitled "Bringing financial services to the poor".

Governments can also pursue other structural and institutional measures to increase private investment in human capital. Measures aimed at poverty reduction and income redistribution could lead to increased private investment in education by the poor. While adult education and some job training may be funded by public investment, apprenticeship and on-the-job training are likely to be privately financed, sometimes with a government subsidy or tax credits. Informal training activities such as apprenticeships, efforts to eradicate adult illiteracy and on-the-job training typically do not involve long periods spent exclusively on learning.

CONCLUSION

The above analysis and country experiences show that education is crucial in facilitating economic take-off and sustained growth. Raising education levels is a process that requires not just time but resources. Yet even a poor country, by making a concerted effort, can achieve substantial progress in improving educational attainments, particularly literacy. One important lesson is that an economic development strategy that creates demand for educated and skilled workers stimulates private investment in education. Given that there exists a mutually reinforcing relationship between education and economic growth, such a strategy will help countries sustain a high rate of growth.

The existence of poverty traps and feedbacks between economic growth and the supply of and demand for education implies the need to prioritize in order to maximize the effect of the often limited resources, public and private, available for education. Progress in education should itself be self-sustaining, with progress in one level generating demand for, and supplying the teachers to provide, education at a higher level. For a poor country attempting to jump-start its economy, the most effective approach would be to concentrate on providing high-quality education to everyone at the primary level, with a particular view to eliminating illiteracy. This would help the country reach the threshold level of education that creates a virtuous circle between education and economic growth. The experience of more successful countries is that continual efforts have to be made to ensure that educational institutions meet the changing demands of the economy.

At the present time, as the pace of globalization quickens with the information-based economy, an educated labour force becomes even more important for any country's effective participation in the world economy. The development and spread of information technology make it easier to relocate production to countries of lower labour costs. However, the competitiveness of a country in the global contest for foreign investment is increasingly dependent on its human capital stock: low labour costs alone are not sufficient. In this context, the importance of education for economic growth is being further strengthened by globalization. Individual countries and the international community face a strong challenge in ensuring that the "digital divide" does not widen. Yet advances in technology themselves open up the possibility of expanding educational opportunities, through distance learning and through making available on the Web written material that might otherwise be inaccessible.

Other social programmes apart from education can also indirectly help increase investment in human capital. Both eradication of poverty and reduction in inequality boost investment in human capital by the poor, which in turn will help reduce poverty and inequality. Eliminating the borrowing constraints faced by the poor, together with other measures, can help break the vicious circle of poverty - low human capital endowment - low economic growth.

VII CREATING TECHNOLOGICAL CAPABILITIES

Technological progress, or rather the ability to generate new technology and to put it to use, has been the major determinant of the wealth of nations. It was the capacity of the present-day developed countries to generate and use technology that powered the Industrial Revolution, thereby producing a hitherto unparalleled increase in the living standards of their populations. In the twentieth century, the "green revolution" saw the advance and application of technology to increase agricultural yields in many developing countries. This removed from many millions of people the spectre of famine.

Even though some of the technology they used had originated in what are now developing countries, the success of the present-day developed countries can also be explained by two factors: they were able to see the potential uses of discoveries made elsewhere and had the organizational ability to put this technology and that which they developed to use. The present chapter will examine two aspects: What are the opportunities that the developments in technology open up for developing countries, and in particular the poorest of the developing countries? and, Are there any steps that can be taken to obtain the greatest possible benefits?

Technology is here understood to be "knowledge about how to do things" and deals with techniques—the choices made when applying technology in specific circumstances with respect to economic, physical and social conditions.[1] If technology is seen in these terms, it is of importance not just to the developed countries, which produce the greatest number of inventions and are in the forefront of technical and scientific development, but also to the developing countries. The latter can learn from their own experience how to incorporate in their production processes the discoveries made elsewhere. The changes made have a tacit element in that they are not easily codifiable nor readily transferable. The adaptations themselves have circumstantial sensitivity—they will be determined by the specific conditions of the country. These two elements—tacitness and circumstantial sensitivity—show that far more is involved in the use of technology by developing countries than simply copying the best practices of other countries.

Technological development is a dynamic concept. It describes improvement: the improvement of an existing production process, allowing the same product to be produced with fewer inputs; the creation of a completely new product, such as a personal computer or mobile phone; the improvement in the quality of an existing product, as in the case of an automobile of today compared with one of 20 years ago. It is difficult, of course, to draw

1 For a fuller explanation, see Robert Evenson and Larry Westphal, "Technological change and technology strategy", in *Handbook of Development Economics*, vol. IIIA, J. Behrman and T. N. Srinivasan, eds. (Netherlands, Elsevier Science, 1995), p. 2,212.

the line between the improvement of an existing product and the creation of a new product. In some cases, technological development can be very specific. In agriculture, it could involve the development of a crop that can be grown in the particular soil of the country and be suited to its climate as well as resistant to the pests found there. In other cases, like that of a manufacturing process, it might be more easily replicable in other countries. In sum, technological development is a matter of the generation and application of knowledge to satisfy human needs. This does not imply that all increases in knowledge should be immediately applicable: research into basic physics, chemistry or astronomy could not be expected to lead in all cases to a new product or process, nor might it be possible to trace the exact paths through which such a discovery leads to a new product.

Moreover, there are many steps from a scientific discovery to the marketing of a product that people would want. A great deal of serendipity comes into play, but good fortune has to be accompanied by hard work as well as a favourable business environment in order for the full potential of a discovery to be realized. This is illustrated by the discovery of Velcro, a patented invention. In the early 1940s, a Swiss inventor, George de Mestral noticed, after walking his dog, that its coat and his trousers were covered with burrs. This was certainly not the first time that such a phenomenon had occurred or been observed: the seed-bearing burrs need to be able to cling to animal fur so that they can travel to new planting grounds. Yet investigating the burrs under his microscope, and observing the hooks on the burrs that enabled them to cling so tenaciously to the loops in the fabric of his trousers, de Mestral realized that this hook-and-loop principle could be used to produce a two-sided fastener, which was called Velcro, from the French words velours (velvet) and crochet (hook). It took some time for the right material to form the hook side to be developed but, in the end, with the assistance of a weaver at a textile plant in Lyon, France, and a loom maker in Basel, Switzerland, the fastener was perfected. It was found that nylon sewn under infrared light formed hooks. The invention was patented in 1955.[2]

Good fortune also played a part in another invention. In 1945, when Percy Spencer of the Raytheon Company was testing a magnetron in connection with the further development of radar for military purposes, he noticed that the waves from the magnetron melted a candy bar in his pocket. He then requested one of his assistants to bring him a bag of unpopped corn, and after this had been placed in front of the magnetron, it began to pop. He and Raytheon could see the potential in this phenomenon—and subsequently developed the microwave oven to cook food through microwave radiation.[3]

These examples illustrate the importance of market potential and a supportive business environment in the development to the product stage of an invention or discovery. But they also show that luck is not enough—educated people with scientific knowledge were needed to see the potential of these discoveries. Throughout this chapter, the importance of education, especially at the higher levels, will be stressed. It can then be seen as a counterpart to the previous chapter, where the importance of laying the foundations in primary education was emphasized.

2 Details from the Web page of the Velcro company (www.velcro.com/htm/loop/invent.htm) and of the National Inventors Hall of Fame (www.invent.org).

3 Details from the National Inventors Hall of Fame (www.invent.org), article on Percy L. Spencer.

ASSESSING THE IMPACT OF TECHNOLOGY

Efforts have been made to assess the contribution of technology to economic growth and development in general. Growth can come about through an expansion of inputs—labour and capital—or through more productive use of these inputs. Yet the expansion in the labour force and the additions to the capital stock alone cannot be relied upon to produce high sustainable growth, for after a point it can be expected that diminishing returns will set in. Probably the prime example of the futility of relying on expanding input growth was to be found in the former centrally planned economies, which had boasted huge rates of investment and full employment and, for some time, correspondingly great increases in output. In the end, though, as these economies reached the full utilization of available labour and capital, the inefficiencies in the system and the inability to turn into civilian products the results of technical advance were such that the system failed to produce goods that consumers actually wanted. There was no easy mechanism or powerful incentive for the inventor of a product of potential civilian use to obtain the funds to develop a prototype and to market it, generating wealth for society and for him- or herself.

On the other hand, the remarkable growth of the Asian countries cannot be attributed just to a larger number of people entering the labour force and working with greater capital inputs. Even those questioning the "Asian miracle" have drawn attention to the fact that the educational standards of the workforce were "dramatically upgraded": in the case of Singapore, more than half the workers had had no formal education in 1966 and, by 1990, two thirds had completed secondary education.[4] The debate about the sources of growth—productivity improvements versus growth in inputs—can become, then, very much one of measuring the inputs correctly and adjusting for changes in quality. The average worker in Singapore in 1966 was clearly a very different "input" into the production process from the average worker in the 1990s. Yet if an attempt is made to account for the increase in workers' "quality" by adjusting for different educational levels, this adjustment could itself capture a major part of what the whole growth process is all about—allowing an increase in output by enabling workers to work more effectively with capital inputs of greater sophistication. To enable them to do so, they need a continual increase in educational standards. Such standards are increased not just through formal education, but also through "learning on the job". Both formal education and the skills and knowledge that are acquired through work experience enable workers to make changes in the way in which they produce goods and services, come up with ways to improve the existing product and find new channels through which to sell goods and services, including to customers outside of the country.

The above description highlights many of the conceptual problems involved in accounting for growth: how to account for improvements in the labour force through education, for improvements in labour quality that come about through learning on the job, for efficiency improvements that come about from modifying an existing process, for higher productivity as a result of new machinery or equipment, for quality improvements in the product that result from experience during its manufacture and for new products that are generated as a result of learning from the production process. Over short periods of time, it might be helpful to look upon growth as coming from increasing the inputs—leaving part of the increase in output to be somehow accounted for by changes in the

[4] See Paul Krugman, "The myth of Asia's miracle", *Foreign Affairs,* vol. 73, No. 6 (November/December 1994), p. 70.

quality of the inputs and other factors.[5] However, over longer periods of time, not only do the measurement problems increase, as serious questions have to be raised whether quality adjustments have been adequately accounted for, but such an approach risks being misleading in failing to provide an explanation for what is, ultimately, the source of long-run growth and increases in living standards—technological progress.

THE THEORETICAL BASIS FOR PUBLIC SECTOR INTERVENTION

Technological advance, even for the developing countries, is not an external factor that is developed elsewhere or a free good that can be acquired without cost or the result of a string of totally fortuitous events.[6] It requires an effort to generate a new technology, or to acquire, modify and exploit to the full technological advances made elsewhere. Technological development cannot be understood in a static setting, for it is constantly pushing forward the production frontier and changing relative prices. Given the centrality of technological advance to economic development, it is understandable that Governments in even the most free market countries adopt policies to promote technology. In the case of the United States of America, for instance, there were the land grant colleges, the forerunners of many of the present-day major universities, which were established in the nineteenth century by the federal Government through the grant of lands. The lands could be sold, with the resulting funds being used to set up colleges to promote agricultural research and the mechanical arts.[7] At that time, the United States was a predominantly agrarian society, but was industrializing rapidly, and the agricultural research stations and extension services established through the land grants were instrumental in enhancing technological progress in agriculture in the United States.

There is evidence that market-friendly policies spur technology, by encouraging enterprise and therefore the discovery and development of new products. Yet the question remains whether the Government should adopt certain policies to promote technology in general or should encourage specific technology to address particular problems. Technology is such a crucial factor in the development process that one wonders whether it should be left solely to market forces. This question is particularly pertinent because of the public-good aspects of knowledge embodied in technology and the externalities attending that knowledge. Typically, the rewards an inventor receives from an invention are much smaller than the total benefits to society. Knowledge is difficult to privatize completely and the knowledge of one firm, institute or person spills over to others. In technology these externalities are usually large, so that social rates of return to research and development (R&D) are significantly larger than private rates.[8] Moreover, it is difficult for an inventor to secure finance in many countries (particularly where venture capital markets are underdeveloped—which is almost anywhere outside the United States[9]) because the knowledge acquired through investment cannot be used as collateral: the returns are uncertain and apparent only after a long period.[10] Thus, markets supply insufficient technology and there might be room for Governments to stimulate inventive activities and adaptation. What shape these interventions should take is less clear, and the possibility that government intervention to "correct" for "market failures" will cause more problems than it resolves cannot be excluded. These issues will be discussed below.

5 An early demonstration that most of growth cannot be traced to an increase in the inputs of labour and capital was given by Robert Solow in "Technical change and the aggregate production function", *Review of Economics and Statistics,* vol. 39, No. 3 (August 1957), pp. 312-320. Dale Jorgenson and Zvi Griliches attempted to adjust the inputs to account for the "residual" in "The explanation of productivity change", *Review of Economic Studies,* vol. 34, No. 3 (July 1967), pp. 249-280. For a review of how economists first tackled the problem posed by the fact that the inputs did not sum to the outputs-that there was a residual-see Zvi Griliches, "The discovery of the residual: a historical note", *Journal of Economic Literature,* vol. 34, No. 3 (September 1996), pp. 1,324-1,330.

6 The point is often discussed whether technical change can be modelled exogenously or endogenously, and whether it involves only information or both information and capabilities. The "neoclassical" approach to growth is frequently characterized as focusing on physical capital accumulation, with technical change being exogenous, while the "structuralist" approach has argued that greater emphasis should be placed on the accumulation of intangible capital, embodied in the skills and capabilities of the local workforce. For a fuller discussion, see Moshe Justman and Morris Teubal, "A structuralist perspective on the role of technology in economic growth and development", *World Development,* vol. 19, No. 9 (September 1991), pp. 1,167-1,174.

7 By the Morrill Act of 1862, each State was granted 30,000 acres of federal land for each member of Congress representing that State. The lands were sold and the resulting funds were used to establish one or more schools to teach "agriculture and the mechanic arts". Altogether, 69 land grant schools were established, offering programmes in agriculture, engineering, veterinary medicine and other subjects. Among present universities that originated as land grant colleges are Cornell in New York, Purdue in Indiana and the Massachusetts Institutute of Technology. Because their admissions policies were more open than most other institutions of the time, land grant colleges made it possible for women, working-class students and students from remote areas to obtain an education at low cost.

8 See, for example, Zvi Griliches, "The search for R&D spillovers", *Scandinavian Journal of Economics,* vol. 94, Supplement (1992), pp. 29-47.

9 See *World Economic and Social Survey, 1999* (United Nations publication, Sales No. E.99.II.C.1), chap. VIII.

10 See, for example, Joseph Stiglitz, "More instruments and broader goals: moving toward the post-Washington Consensus", *WIDER Annual Lectures,* No. 2 (Helsinki, UNU/WIDER, January 1998), pp. 26-28.

TECHNOLOGICAL CAPABILITIES

The transfer of technology and its successful application in another country are critically dependent on the technological capacities of the receiving country. An important aspect of technological progress is the adaptations to local conditions, which can be achieved only if technological capabilities are in place: "Simply providing equipment and operating instructions, patents, designs or blueprints does not ensure that the technology will be effectively utilized.[11]

The Republic of Korea, for example, expended arduous effort to produce a car. It purchased foreign equipment, hired expatriate consultants and signed licensing agreements with foreign firms. Yet, "Hyundai engineers repeated trials and errors for fourteen months before creating the first prototype. But the engine block broke into pieces at its first test. New prototype engines appeared almost every week, only to break in testing. … There were 2,888 engine changes. … Ninety-seven test engines were made before Hyundai refined its natural aspiration and turbocharger engines. … In addition, more than 200 transmissions and 150 test vehicles were created before Hyundai perfected them in 1992.[12]

The assimilation of technology has to be accompanied by local learning, in other words, technological capabilities have to be created. The more complex the technology, the more skills and effort are required to acquire them. Yet, at any level of complexity, an effort needs to be made. At low levels of technology, primary education (literacy and numeracy) and on-the-job training for skill acquisition are largely sufficient. At higher levels of technology, more specialized skills and formal technical education and vocational training are required.[13]

The acquisition of technological capabilities is a long and costly process, fraught with uncertainty and risk. This process can be encouraged by incentives provided by markets. Yet, because of the uncertainties, risk and externalities, private efforts to acquire technological capabilities are, in theory, likely to be insufficient. Solely relying on market forces could result in underinvestment in technological capabilities, which would make it difficult—if not impossible—for developing countries to expand exports of manufactured goods and to attract foreign direct investment (FDI). Governments have a role in enhancing technological capacities by providing education and establishing and facilitating the creation of institutions. This role changes with the level of technological sophistication. At low levels of technological development, Governments should focus on primary education and some basic training. At higher levels of technology, Governments efforts should be directed more towards creating research and training networks.

Incentives and capacities are both essential ingredients for technological progress. Over the last two decades, many developing countries have improved the incentive system by stabilizing the macroeconomic environment and liberalizing markets. This, however, is one side of the equation. As examined earlier, creating technological capacity requires long-term commitment. The Republic of Korea and Taiwan Province of China have been so successful that they have been able to enhance both incentives and capabilities at the same time. Their Governments provided the incentives to export, enhanced techno-

11 See Sanjaya Lall and Wolfram Latsch, "Import liberalization and industrial performance: the conceptual underpinnings", *Development and Change,* vol. 29, No. 3 (July 1998), p. 445.

12 See Linsu Kim, *From Imitation to Innovation: Dynamics of Korea's Technological Learning* (Boston, Massachusetts, Harvard Business School Press, 1997), p. 122, quoted in Richard R. Nelson and Howard Pack, "The Asian miracle and modern growth theory", *The Economic Journal,* vol. 109, No. 457 (July 1999), p. 432.

13 See, for example, Sanjaya Lall, "Technological capabilities and industrialization", *World Development,* vol. 20, No. 2 (February 1992), pp. 170-181.

logical capabilities through their emphasis on education, training, networks and information-sharing and, adopting policies that would no longer be permitted by present trade regulations, protected several industries so as to allow time for learning.

DIFFUSION MECHANISMS FOR TECHNOLOGY

Much of technology is acquired in the normal course of business relations. The results of technological advances are embodied in modern machinery and so the import of capital goods is a frequent means of transmission. Yet a country might wish to develop its own capital goods industry to supply products to local manufacturers, in the hope that, through "learning by doing", it would eventually master, and hopefully later improve upon, the technology involved. Such a policy might require providing protection not only to the local producers of the capital goods, but also to the resulting consumer products. With a protected local market in, say, textiles, it might be felt that the local manufacturer of looms would be encouraged. This type of "infant industry" argument has been successfully applied in some countries, in conjunction with other policies, especially those that promote exports. However, in many countries it has also failed. At the present time of globalized and freer trade in goods and services and increasing international restrictions on such direct support of export industries, the feasibility of the adoption of such a policy is becoming increasingly questionable.

Technological advances in the capital goods industries occur with such rapidity that newcomers would constantly risk being out of date, even if the effects of protection were such as not to make them complacent about the need to invest in technological improvement. Given the tacitness and circumstantial sensitivity of technology, improvements in production processes result not just from substituting a more modern machine for an older model, but also from improving the overall productivity of the enterprise by discovering and exploiting to the full advantages that can be derived from this equipment in the specific circumstances in which the firm operates. Thus an attempt to develop a domestic capital goods industry could result in firms' not only using inferior equipment, but also adopting out-of-date production practices.[14] Against these disadvantages would have to be set the benefits that come from "learning by doing" and from acquiring knowledge of production techniques, even if not state-of-the-art ones, in the course of establishing a domestic capital goods industry.

An alternative to forcing domestic producers to develop their own technology by excluding foreign producers of consumer and capital goods is to build a domestic technological capacity and induce domestic producers to obtain access to foreign technology. Knowledge can be acquired with the direct purchase of capital equipment, for the manufacturers will often supply technical aid in the form of installation and service. Moreover, the accompanying manuals and blueprints can instigate further capability development, especially if the importing firm proceeds to undertake reverse engineering or imitative engineering, which was an important source of capacity development in East Asian countries.[15] However, in future, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) administered by the World Trade Organization may prevent reverse engineering,

[14] The conclusion of the United Nations Conference on Trade and Development (UNCTAD) was that "Import substitution, by removing the competitive spur to learning, led to technological inefficiency and lags." (See *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development* (United Nations publication, Sales No. E.99.II.D.3), p. 196.)

[15] See the issues paper by the UNCTAD secretariat entitled "Policies and non-fiscal measures for upgrading SME clusters-an assessment" (TD/B/COM.3/22), p. 5, prepared for the Trade and Development Board, Commission on Enterprise, Business Facilitation and Development, fourth session, Geneva, 19-23 July 1999 (item 3 of the provisional agenda).

In general, the evidence is that trade with technologically advanced countries benefits developing countries that are further behind in respect of the technology frontier. Trade makes available to them products that embody advanced knowledge and useful information that would otherwise be costly to acquire. Empirical results indicated that developing countries "derive important and substantial benefits from research and development performed in the industrial countries".[16] It was estimated that each dollar investment in United States R&D generated in the long run about 25 cents in extra output for developing nations.[17]

Other transfers of technology often require the foreign company to make an investment in the developing country or to establish a long-term relationship with suppliers there. In many cases, the foreign company will be a transnational corporation (TNC) with operations in several countries. However, one of the implications of the latest technological developments entails reducing the viable size of a company and so expanding the range of potential foreign partners for firms in developing countries. The results of previous research on the operations of large TNCs in developing countries might not, then, be fully applicable in the present rapidly changing environment. The general principle applies that both parties are working with imperfect knowledge and therefore the terms of any deal between the two are likely to be more difficult to negotiate the further the technological distance between them. The technological level of the receiving country is a major determinant of the nature of the transaction and the extent of the partnership. At one end, the relationship between a developed-country TNC dealing with an affiliate in another developed country is likely to approach equality in capabilities and full information-sharing. At the other end stands a least developed country, with a low skill base, where a small plant is doing "final touch" assembly with practically no adaptation or process engineering. In this case, the initial technology transfer could consist of limited training to local shop floor and supervisory staff, with minimal technological content.[18]

What technologies and functions TNCs actually transfer depend greatly on local capacities. There is thus "a role for policy in upgrading capabilities to optimize the transfer of TNC technology and encourage its dissemination. Moreover, there is also a role for policy in attracting higher-quality FDI: providing better information to prospective investors and ensuring that their needs are met can be a vital tool for technology development".[19] As with so much of the discussion of technology, the local capabilities to absorb and use technology—determined by the local educational system—are vital.

The relationship between foreign and local firms can develop so that the technological transfer becomes less of a one-way street. The most important determinants of this technology transfer are the levels of skills and abilities of the local firm, its competitors and the supplier network, and the competitive environment facing the affiliate. The higher the level of local capabilities and the more competitive the environment, the better the quality of the initial transfer and the more rapid its upgrading. A policy to raise the overall educational levels of a country's workforce would certainly make it more attractive to foreign firms, as would any policy to improve the business environment. In many cases, a trade-off has to be achieved between present and future—a generous tax policy might be used to attract a TNC in the first place. Such a policy

16 See David Coe, Elhanan Helpman and Alexander Hoffmaister, "North-South R&D spillovers", *The Economic Journal*, vol. 107, No. 440 (January 1997), p. 148. The regression sought to explain total factor productivity in developing countries by the foreign R&D stock, the share of machinery and equipment imports from industrialized countries in each developing-country GDP, and the secondary school enrolment ratio in the developing country. The foreign R&D capital stocks for each developing country were constructed as the weighted average of the domestic R&D capital stocks of their industrialized country trading partners. The spillovers from the United States R&D expenditures were the largest because it was the largest trading partner for many developing countries, particularly those in Latin America and the Caribbean, and because it had the largest R&D capital stock.

17 See Tamin Bayoumi, David Coe and Elhanan Helpman, "R&D spillovers and global growth", *Journal of International Economics*, vol. 47, No. 2 (April 1999), p. 417. The authors used the results of their earlier study for equations explaining total factor productivity incorporated in the MULTIMOD model (p. 405).

18 See *World Investment Report 1999* ..., box VII.4, for a schematic presentation of the differing technology content in TNC transfers.

19 Ibid., p. 219.

might, in retrospect, be felt to have been too generous if the foreign firm's operations turn out to be more profitable than originally anticipated. There are no fixed rules, except that the more stable the environment facing the foreign partner, the more confident it will be about expanding its relationship with the host country, including expanding its technological links. Similarly, the longer the relationship lasts, the more time the local industries will have to come up to the level of state-of-the-art production methods: technology transfer is a matter not just of immediately bringing international best practices to the host country, for case studies of plants in Asian countries show that it can take many years for a firm in a developing country to learn to master and adapt techniques so as to bring the productivity of its plant to international levels.[20] In a relationship with a foreign buyer of its products, the developing-country firm also benefits by the foreign partner's setting rigorous specifications for the domestic firm to meet. This, in effect, forces it to improve its technology.

[20] See Nelson and Pack, loc. cit., pp. 21-22.

Measures that seek to force or induce foreign investors to make their investment decisions in different ways from domestic firms are likely to become more difficult over time for countries to impose. There was considerable disagreement among countries during the Uruguay Round of multilateral trade negotiations over the whole issue of trade-related investment measures (TRIMs). The Agreement on Trade-Related Investment Measures applies only to investment measures related to trade in goods, does not actually define what a trade-related investment measure is (although it does provide an illustrative list of measures that were inconsistent with articles of the General Agreement on Tariffs and Trade (GATT)), and focuses on the discriminatory treatment of imported and exported products, without considering the entry and treatment of foreign investors. It does not, then, cover many of the issues that were discussed in the Uruguay Round such as export performance and transfer of technology requirements. However, article 9 of the agreement stipulates that not later than five years after it enters into force the agreement should be reviewed (that is to say, after 1 January 2000), with a view to considering whether it should be supplemented with provisions on investment policy and competition policy. The direction of policy is clear though—to make it more difficult for countries to impose restrictions on FDI and to direct FDI towards what the countries themselves perceive as their development goals.[21] A strategy that relied on imposing transfer of technology requirements on foreign firms could become less viable in the future—even if it were theoretically sound.

[21] See "Policies and non-fiscal measures for upgrading SME clusters: an assessment"..., p. 10.

TECHNOLOGY IN THE AGRICULTURE SECTOR

The successful application and development of technology require an array of skills—ranging from basic scientific research or access to it, and applied research, to the provision of extension services and learning on the job. Many of these areas require public and private institutions that, generating discoveries and adapting existing ideas to national circumstances, will help propel overall technological development. A kind of virtuous circle arises in which ideas generated in one institution (say, a research finding) can be used by another institution that is closer to the design of a consumer product. There must be feedback mechanisms between the different institutions to ensure that ideas are translated into commercial propositions (and to find the resources for their implementation).

Strong cooperation between institutions is of crucial importance to the sector of most relevance to many developing countries—agriculture. It was earlier mentioned how, in the United States, land grants were part of a successful effort to advance agriculture through the establishment of an agricultural research system, extending from basic research to extension services to the final user. In agriculture, an objective can be fairly clearly defined—for example, to increase the productivity of arable land, and develop grains that are suited to local conditions, such as harsh weather or local pests—and efforts made to achieve it. The systems that the developed countries erected and continue to maintain to foster agricultural research have resulted in the absorption by private and public research in agriculture each of about 1.5 per cent of gross domestic product (GDP), a higher proportion for both categories than in the developing countries; the share of GDP of public research in agriculture in the least technologically developed of the developing countries was about 0.4 per cent and virtually no private research was conducted.[22]

Domestic research is of vital importance to the agricultural sector because of circumstantial sensitivity—agricultural inputs such as seeds have to be adapted to the local soil, and climatic and ecological characteristics of the particular country. Moreover, the development of new seed inputs is essential in agriculture because the yields of a new variety that was resistant to certain diseases and pests will eventually fall as new diseases and pests themselves evolve and overcome the variety's defensive mechanisms. This happened with the variety of rice that was developed in 1964 and released in 1966 to usher in the green revolution. By 1970, its yields had fallen. Various breeding programmes led by the International Rice Research Institute (IRRI) developed new varieties that were resistant and so yields were maintained.[23]

Agricultural research can be expected, then, to exhibit a high return in respect of coming up with the new varieties needed to maintain or increase yields. Studies of 85 public research institutes, including the international agricultural research centres, in 81 developing countries found a mean return of 80 per cent. The mean rates of return were high for all regions. The rate of return in the 71 programmes in the developed countries was 48 per cent. Public sector agricultural extension services in developing countries also exhibited a high return—of 50 per cent.[24]

In the past, publicly funded research and extension programmes have produced impressive results in agriculture, in cases where the international and national research centres have granted free access to the knowledge of the products they were developing. Returns would have been considerably lower in the developing countries, which tend to rely on adaptive invention, if they had not been able to rely on obtaining at no direct cost the results of pioneering invention and pre-technology science emerging from international agricultural research centres and developed-country research systems.[25]

The issue arises whether the patenting of the results of private research in agriculture will stem the flow of discovery in the developing countries and increase the costs of their inputs. These questions are directly related to technological developments elsewhere—the advances in digital technology which allow the amassing and manipulating of vast amounts of data, thus greatly facilitating the study of genetic material.

22 See table 37.1 in Evenson and Westphal, loc. cit., p. 2,242.

23 Ibid., pp. 2,253-2,254.

24 Ibid., p. 2,274.

25 Ibid., p. 2,275.

Research into genetically modified crops by private corporations was given a boost by the decision of the United States Supreme Court in 1980 that extended patent protection to new types of plants and plant parts, including seeds, tissue cultures and genes.[26] This justified the heavy investment needed to develop these products. One concern is over the safety of genetically modified foods.[27] After testing by the appropriate government authorities, genetically modified food crops were first released for large-scale commercial use by farmers in the United States in 1996, and by 1999, roughly half the United States soybean crop and one third of the corn crop were genetically modified.[28] So far, the use of these crops is largely confined to the United States, which accounted in 1999 for 72 per cent of all land planted with genetically modified crops; Argentina, which accounted for another 17 per cent; and Canada, which accounted for 10 per cent. The advantages for the United States farm industry were that these crops reduced the problems of pest and weed control and soil protection. For instance, a company developed soybeans with a built-in immunity to one of that company's herbicides. This herbicide could then be used once, replacing the need for more toxic and long-lasting weed killers or soil tillage. In the case of cotton, the genetically modified strain contained a toxin that minimized insect damage to plants and reduced the need for chemical sprays.

Genetically modified crops have not spread to Europe because of concerns over safety. There has been a vigorous debate on this issue, conducted largely between farmers in the United States and consumers in Europe. However, the consumers and producers in developing countries stand to gain much from the spread to them of genetically modified crops. Cheaper foodstuffs would result from producers' being spared some of the present costs of fertilizers and tillage. Moreover, the foods themselves could be modified to contain nutrients, such as vitamin A and iron, that are lacking in the diets of many poor people. It is thus of considerable importance for the developing countries themselves to enter into this debate, in order to ensure that their own interests are protected and that research into genetically modified crops will address their own special climatic and soil conditions.

In this context, there has been concern that biotechnology firms would patent genes, introduce "terminator technology" that could prevent poor farmers from reusing seeds and sue those whom they claimed were stealing their intellectual property.[29] A hopeful recent development was the announcement in April 2000 by the Monsanto Company, a major United States biotechnology company, that it had come up with a "working structure" of the genetic structure of rice and that it would supply this data to the International Rice Genome Sequencing Project (IRGSP).[30] The project is committed to putting all its findings on public databases. The information was supplied on condition that IRGSP complete the rice sequence and publish it as quickly as possible. Monsanto's contribution can reduce the time taken to decode the entire rice genome from eight to between two and three years.[31] Monsanto had earlier announced that it would not commercialize terminator technology.

The advances taking place in agricultural research make it even more imperative that developing countries ensure that they are in a position to benefit from scientific discoveries made elsewhere, to adapt and develop their own technologies and to make substantial contributions to the body of knowledge. Every effort should be made to keep their researchers up to date with respect to the

26 See Decisions of the United States Supreme Court, *Diamond v. Chakrabarty,* 44 U.S. 303 (1980). The Justices were interpreting 35 United States Code (U.S.C.), § 101, which stipulates that "whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor". The Justices quoted the Patent Act of 1793, authored by Thomas Jefferson, which defined the statutory subject matter in similar terms (Act of Feb. 21, 1793, § 1, 1 Stat. 319). The Justices described how the Act embodied Jefferson's philosophy that "ingenuity should receive a liberal encouragement".

27 For the results of a recent international conference on the health and safety issues see "GM Food Safety: Facts, Uncertainties and Assessment", OECD Edinburgh Conference on the Scientific and Health Aspects of Genetically Modified Foods, 28 February-1 March 2000 (http://www.oecd.org/subject/biotech/edinburgh.htm).

28 For a fuller discusssion of the potential importance of genetically modified crops for developing countries, see Robert Paarlberg, "The global food fight", and C. Ford Runge and Benjamin Senauer, "A removable feast", *Foreign Affairs,* vol. 79, No. 3 (May/June 2000), pp. 24-51.

29 For a concise review of the issues, see the remarks by Gordon Conway to the Board of Directors of the Monsanto Company, 24 June 1999 (www.rockfound.org/news/gmfood_sp.html).

30 A genome is the entire collection of genes that contain the instructions on how to build and maintain an organism. The rice genome has about 430 million "base pairs" or deoxyribonucleic acid (DNA) units.

31 For details on the offer see *Financial Times,* 5 April 2000, p. 5, and *Financial Times,* 11 April 2000, p. 11.

latest developments and well keyed into the global agricultural research network. Developing countries will also need the detailed scientific and legal knowledge that will enable them to defend and promote their own interests in the often-complex negotiations arising as the rights of intellectual property, devised to ensure the inventor a return on his scientific discovery, have to be balanced against the tradition that knowledge should be made freely available and that expanding the corpus of knowledge itself stimulates further expansions elsewhere.[32] This latter tradition frequently draws upon the statement by Thomas Jefferson that "he who receives an idea from me, receives instructions himself without lessening mine; as he who lights a taper at mine, receives light without darkening me".[33] Yet the same Jefferson, who stressed the non-rivalrous and public-good nature of knowledge, also wrote the first United States patent law (of 1793) which reflected his philosophy that "ingenuity should be given a liberal encouragement".[34]

Yet, there remains a concern that a liberal environment does not offer enough incentives. In particular, many food crops that are important staples in developing countries, such as sorghum, millet, cassava, yams and pulses, are neither consumed nor grown in developed countries. This, combined with the limited purchasing power of developing countries, generates insufficient commercial interest in the conduct of research on these crops.[35] Governments in developed countries can contribute to the development of new technology for agriculture in developing countries in a number of ways. They can fund international research programmes, for example, those of the Consultative Group on International Agricultural Research (CGIAR). They can also fund private research within firms or research institutes—or offer tax incentives—and ensure that the results of this research are made available to developing countries.

THE NEW TECHNOLOGY IN THE MANUFACTURING AND SERVICE SECTORS

In the manufacturing and service sectors, the final product is not so clearly identifiable as in the agricultural sector where it can be said that the aim is the efficient production of safe, nutritious and tasty foodstuffs. New products can and do emerge in agriculture, but there is a much stronger degree of continuity than in the manufacturing and service sectors. Previously, perhaps, there was a degree of predictability in these sectors, and particularly the industrial sector, that made planning possible. Until recently, the aim of countries attempting industrialization such as Japan, and later its Asian neighbours, could be described as having been to understand the processes of mass production and to learn to use the latest production techniques. It was a matter not only of installing capital equipment from overseas, but also of acquiring the institutions and the technical knowledge that would enable production processes used elsewhere to be adapted to local conditions and tastes, leading to the development of new products for domestic and export markets. Their industrial progress was very much a process of learning by doing. Whatever were the differences in the policies they pursued, the formation of a highly trained workforce was central to all their efforts to achieve industrial modernization.

However, the policies that have to be put in place to modernize the economy are themselves dependent upon the kind of directions that technology is

32 This dilemma was illustrated by the fact that in March 2000, the President of the United States, Bill Clinton, and the Prime Minister of the United Kingdom, Tony Blair, announced that "raw gene-sequence information should be made freely available to scientists everywhere", and, in April 2000, President Clinton clarified his statement, saying: "If someone discovers something with a specific commercial purpose, they should get a patent." (See *Financial Times,* 6 April 2000, p. 5.)

33 See, for instance, Joseph E. Stiglitz, "Knowledge as a global public good", in *Global Public Goods,* Inge Kaul, Isabelle Grunberg and Marc Stern, eds. (New York, Oxford University Press for the United Nations Development Programme, 1999), p. 308. The original quotation was contained in a letter from Jefferson to Isaac McPherson written in 1813 which also contains the following statement: "The exclusive right to invention (is) given not of natural right, but for the benefit of society."

34 See note 26 above. Thomas Jefferson wrote to Oliver Evans in 1807: "Certainly an inventor ought to be allowed a right to the benefit of his invention for some certain time. It is equally certain it ought not to be perpetual; for to embarrass society with monopolies for every utensil existing, and in all the details of life, would be more injurious to them than had the supposed inventors never existed. … Nobody wishes more than I do that ingenuity should receive a liberal encouragement."

35 See *World Economic and Social Survey, 1995* (United Nations publication, Sales No. E.95.II.C.1), box VII.2.

seen as taking. In the nineteenth century, for example, steam power had generated tremendous demand for steel to be used in railways and shipping, giving rise to the kind of giant industrial conglomerates that dominated this industry. These industries were interdependent in their development, in that rail transport reduced the price of delivery of bulky products, including steel itself, while the demands of the rail sector for steel made a large and low-cost steel industry viable.[36] Mass production in the manufacture of a fairly standard unit, such as a bottle or shovel, was justified. As in the case of many innovations, the ultimate beneficiary was the consumer who benefited from lower-cost travel and from the extension of the market that cheap transport costs had brought about. It was often the case that the initial exploiter of the invention did not fully benefit: railway development cost many shareholders dearly in the nineteenth century.

In order to understand where developing countries now stand and which directions their policies towards technological development should take, the present direction of technological change and its implications must be analysed. It could be the case that a set of policy recommendations based upon the experience of those who developed and adopted an earlier technology have to be radically adjusted to take account of the particular nature of the very different technology now being introduced. Given the speed of that technology's introduction, much of the subsequent description will rely on the latest financial literature, rather than academic studies that are providing the framework for analysis. Moreover, much less analysis has been conducted on investment in technology in the industrial and service sectors of the developing countries, as opposed to the agriculture sectors: whereas 85 studies were cited in the study referred to earlier on the returns to public sector agricultural research in the developing countries, only 5 were cited on the returns to public sector industrial research.[37] This lack of information at the microlevel of what actually occurs in the developing countries makes policy prescriptions difficult. Although there are strong theoretical arguments in favour of public intervention in the area of technology, more empirical research is needed to support these arguments in different settings and to determine whether it is appropriate to develop a specific policy towards technology and, if so, how technology policy can best be conducted to reach the intended objectives.[38] There are both successes and failures. More research is needed on the factors that determine what makes the difference between success and failure, although some evidence seems to suggest that intellectual property rights, the assurance of a stable macro environment, the enforcement of competitive market behaviour and an open-economy strategy with respect to trade of all forms are important factors.[39]

Commercial implications of the new technology

The fact that the latest wave of technological innovation has led to the commercial exploitation of digitalization and miniaturization is allowing the fast and convenient manipulation of vast amounts of information. This ability to process large volumes of information easily has been incorporated in standard products (such as drilling machines and automobiles) and so has produced a quality change that sometimes borders on a new product. Tasks that could not have previously been accomplished are now possible at a reasonable cost. For instance, the Channel Tunnel's boring machines allowed for a precision that

36 See Moshe Justman and Morris Teubal, "A structuralist perspective on the role of technology in economic growth and development", *World Development,* vol. 19, No. 9 (September 1991), p. 1,177.

37 See Evenson and Westphal, loc. cit., p. 2,274, The authors state (p. 2,291) that "case studies of seemingly successful public sector investment programmes outside of agriculture are especially needed".

38 For instance, in the absence of developed capital and insurance markets, public intervention to reduce the risk to entrepreneurs might be justified on the grounds that even unsuccessful innovators reduce uncertainty for potential followers. However, "sufficient empirical evidence is simply not available" (see Evenson and Westphal, loc. cit., p. 2,287).

39 Ibid., pp. 2,286-2,287.

would otherwise have been very difficult, if not impossible, to achieve with earlier machines. Prototypes for products can be designed and tested on an electronic drawing board, with the calculations readily performed and the problems that might have been found only by constructing a specimen identified at very little cost. Thus, the manufacturing process has itself changed and become both more flexible and, in many cases, simpler. Now importance has shifted to the design stage: the assembling of the components of a final product, which previously might have required considerable engineering or mechanical skills, has become routine and can be readily performed almost anywhere for a wide array of products. The division of labour can be more fully exploited globally: the design stage can be carried out in one part of the world, with the manufacturing carried out elsewhere, and the invoicing somewhere else. To a great extent, then, this information processing has led to the further rise of the service sector (although some of this might be a counting problem, as functions that were previously performed in-house by employees who would have been classified as belonging in other sectors are now being performed by what is classified as a service company).

Developments in the communications field have enabled the globalizing possibilities of digitalization to be more fully realized. This was achieved primarily through mobile phone technology (allowing for the communication of fairly small amounts of information at very low cost and without the need for landlines) and the Internet (allowing for access to an ever-expanding amount of information at almost zero cost by anyone anywhere in the world). The next generation of technology will merge and more fully exploit these and other developments.

The new technology has already made major impacts in developing countries. Changes in the matter of a few years can be of several orders of magnitude. For instance, use of the Internet in Latin America is estimated to have doubled between 1997 and 1999. There are estimates that about 5 million people used the Internet in that continent in 1999, but that 34 million will use it in 2000.[40] The room for "catch up" with the heaviest users of the global Web is great. In Latin America, 1.5 per cent of the population is estimated to have used the Internet, as compared with 37 per cent in the United States. Similarly spectacular growth has been seen in mobile phones: in 1990, there were just over 11 million of them worldwide, and in 1999 there were about 400 million. New mobile phone connections far outstrip fixed-line connections at the present time and one estimate is that there will be 1 billion mobile phones in 2004—the number will be greater than the number of wired phones.[41]

The recent report of the Secretary-General on the role of the United Nations in the twenty-first century gave some indication of the speed with which the new technology, as compared with previous technologies, is being introduced. Whereas it took 38 years for radio, and 13 years for television, to reach 50 million people, the same number of people adopted the Internet in just 4 years. There were 50 sites on the World Wide Web in 1993—and in 2000 there were more than 50 million.[42]

The present pace of technological innovation can be seen as another in those Schumpeterian waves in which advantage is taken of a series of innovations. This innovatory wave is based on semiconductors, fibre optics, genetics and software.[43] Its full importance cannot be measured in physical

[40] See Ricardo Gomez, "The hall of mirrors: the internet in Latin America", *Current History,* vol. 99, No. 634 (February 2000), p. 72. Of course, with such fast rates of change, predictions have a wide margin of error.

[41] See "A survey of telecommunications", *The Economist,* 9 October 1999, p. 5.

[42] See the report of the Secretary-General to the Millennium Assembly of the United Nations entitled "We the peoples: the role of the United Nations in the twenty-first century" (A/54/2000), para. 152.

[43] In the first such wave, extending from 1785 to around 1845, the main innovations were the use of water power and the mass production of textiles and iron; in the second, from 1845 to around 1900, the main innovations were steam power, railways and steel production; in the third, from 1900 to around 1950, the main innovations were electricity, industrially produced chemicals and the internal combustion engine; in the fourth, from 1950 to around 1990, the chief innovations were petrochemicals, electronics and jet-propelled aviation (see "A survey of innovation in industry", *The Economist,* 20 February 1999, p. 8).

terms, such as the number of new products directly incorporating the new technology, or the flow of trade of goods classified as "high technology", or even the share of high technology in the economy.[44] It involves changes in the way almost all products are manufactured, and in the way business is conducted and brings about the creation of new industries, often in the service sector, that might not be classified as high technology, but could not exist without the possibilities that the new technologies have opened up. Its full implications, especially for the poorer countries, are only now beginning to emerge, yet certain are already apparent.

The universal connectivity of the Internet has helped create a more competitive business environment. It has given more power to the buyer in the sense that the buyer can, at much reduced cost, obtain information about different products from the Web and can switch suppliers accordingly. (An example of this change in power has been the introduction of the "reverse auction", in which the buyer posts the price at which he or she is prepared to purchase an item and the sellers compete to match that price.) It has also greatly decreased the cost of doing business and thus has stimulated economic activity in a way similar to that in which the development of railways in the last century opened up large areas of the world for commercial exploitation. It has been estimated that a banking transaction over the Internet costs 1 cent, as compared with 27 cents through an ATM (automated teller machine) and 52 cents over the telephone. Processing an airline ticket on the Internet costs $1, compared with $8 when the ticket is obtained through a travel agent.[45]

In this increasingly competitive world, successful new businesses taking advantage of the Internet can start up very quickly and grow spectacularly. It can take a little over two years for a start-up company to formulate an innovative business idea, establish a Web presence and begin to establish a major presence in its chosen sector.[46] However, as in any competitive environment, especially new ones, businesses can also fail. To start up new businesses requires entrepreneurs prepared to take risks and also financial markets that can supply the capital needed. Venture capital investments increased from $6 billion in 1995 to $28.6 billion in the first three quarters of 1999. Whereas it previously took about five years to build a business to the point where venture capital would be entering, it is now thought to require less than a year. The new industries have been assisted by stock markets. Sums raised in initial public offerings in the United States rose from $28 billion in 1994 to over $70 billion in 1999.[47]

The ensuing rapid restructuring of the corporate sector is a phenomenon not just of developed countries.[48] The success of the information technology companies in India has transformed the corporate scene there. In October 1995, there were no such companies among the top 10 private sector companies in terms of market capitalization. In 1999, there were four. One of them, Infosys, was the first Indian company to list, in March 1999, on the Nasdaq (National Association of Securities Dealers Automated Quotations System) stock exchange in New York.[49] The market capitalization of listed Indian information technology companies rose from $4 billion in January 1999 to $63 billion in February 2000.[50]

44 As indicated in the Secretary-General's report: "The information technology sector, in short, can transform many if not most other sectors of economic and social activity"(para. 158).

45 See "The net imperative: a survey of business and the Internet", *The Economist,* 26 June 1999, p. 24.

45 Ibid., p. 6.

47 See *Financial Times,* 14 December 1999, p. 11.

48 A measure of the restructuring is that, of the top 100 companies by capitalization in the United States of America in 1999, about a quarter did not exist a generation ago (see *Financial Times,* 14 December 1999, p. 11).

49 See *Financial Times Survey: India,* 19 November 1999, p. VI.

50 Information from the Web page of the National Association of Software and Service Companies (NASSCOM) (www.nasscom.org).

The very nature, then, of this technological revolution will have profound effects on different countries. The downside to rapid restructuring is that existing firms can be driven out of business by the newcomers. Questions arise whether it will be so easy for countries to raise money to exploit, say, natural resources, when the prices of mining shares are performing much worse than those of high-technology stocks. The Internet has also some monopolistic tendencies that favour existing firms, predominantly in the developed countries. The value of a network increases with those who are hooked into it. Thus, the first in the field who establishes a presence tends to dominate. This is the case, for instance, with on-line book purchasing. Moreover, the Internet creates the need for standard products, for instance, a word-processing or spreadsheet programme that enables a person to send an electronic document over the Net and have it read by the user at the other end.

The technology and information innovations are shifting the balance of power among Government, the corporate sector and the individual. To take full advantage of the possibilities requires citizens to have access to the World Wide Web, which makes it harder for Governments to control the population's access to information, even if they wish to do so. Attempts to limit access to the Internet would, in effect, serve to reduce the country's potential growth.

The Internet is a powerful tool for the health and education sectors, which, through their contribution to building up human capital, can make a contribution to growth. It can provide doctors in developing countries with access to medical information and help from experts in other countries.[51] Distance learning through the Internet is also possible by establishing virtual classrooms in which users access a national Web site or connect to international sites.[52] Finally, the explosive growth in the technology sector is bringing about calls for even faster deregulation of business activity, which should also foster growth.

The technology revolution is a matter of businesses selling not just to the individual consumer, but to each other. One estimate is that the $19 billion of business-to-business electronic sales in 1997 will increase to $251 billion in 2000.[53] Electronic business helps managers gain greater control over their operations and process costs. It increases management's control over inventory and price.

The technology revolution can also affect developing countries in that, in response to growing competition and reliable and cheap communications, businesses are increasingly looking overseas for new opportunities. The Internet allows them to contact new suppliers and can bring them new customers. Electronic business has also created new business opportunities in the fields of procurement, electronic commerce, auctioning and advertising. For instance, TradeOut.com auctioned a large amount of fibre-optic cable, located in the United States, to a utility company based in India.[54]Some businesses in developing countries that are not on-line can be at a profound disadvantage, as more and more businesses buy from each other on-line.[55] The Internet is also opening up markets for developing-country producers. For instance, craft makers in Africa are beginning to sell their wares through the Web, for example, with www.buy-afrika.com. In West Africa, a women's fishing cooperative set up a Web site that has enabled its 7,350 members to promote their produce, monitor export markets and negotiate prices with buyers overseas.[56]

51 The United Nations is to establish a Health InterNetwork for developing countries. This will establish and operate 10,000 on-line sites in hospitals, clinics and public-health facilities throughout the developing world (see A/54/2000, paras. 164-165).

52 See *Financial Times: FT Telecoms,* 24 November 1999, sect. 2, p. XI.

53 See *Financial Times Survey: Electronic Business,* 20 October 1999, p. I. An estimate by Goldman Sachs is that business-to-business sales in the United States will rise from $39 billion in 1998 to $1,500 billion in 2004, an annual growth rate of 84 per cent. See Martin Brookes and Zaki Wahhaj, "The shocking economic effect of B2B", *Global Economics Paper,* No. 37, Goldman Sachs, 3 February 2000, p. S.07.

54 See *Financial Times Survey: Electronic Business,* 20 October 1999, p. I; and Brookes and Wahhaj, loc. cit., p. S.07.

55 For instance, in September 1999, British Telecommunications announced a move to get all its 1,000 suppliers to conduct business with it via the Internet. It estimated that this would save it about $1 billion a year of its $9 billion procurement budget (see *Financial Times Survey: Electronic Business*, 20 October 1999, p. I). In May 2000, most of the world's largest mining companies announced plans to transfer their global procurement activities-valued at about $200 billion in 1999-on-line (see *Financial Times,* 15 May 2000).

56 See Mike Jensen, "Making the connection: Africa and the Internet", *Current Affairs,* vol. 99, No. 637 (May 2000), p. 218.

POLICY IMPLICATIONS

There are strong theoretical arguments, related to the public-good characteristics of technology, that support a role of government policy in the area of technology. The roles range from funding of research, tax incentives and subsidies to providing a conducive environment and supporting education and training. The preceding description of the implications for the business environment of the latest wave of technological advance allows for a discussion of the proper role of Government in the development of technology. The question is whether there are special features of the digitalization and miniaturization revolutions that perhaps call into question previously successful models for the benefiting of developing countries from technological progress so as to increase their living standards.

Interventionist policies to promote technology

Much of the theoretical discussion on government promotion of technology is based upon the experience of the East Asian countries—before the success of the Indian high-technology sector and before the 1997 crisis in these countries raised questions about the long-term sustainability of many of the policies that they had pursued, hitherto with great success. The interventions that these countries undertook in order to promote their technological development have been categorized as selective interventions that targeted particular activities ("picking winners"); functional interventions, intended to improve markets, in particular factor markets, without favouring particular activities; and horizontal interventions that addressed activities for which markets were missing or particularly difficult to create in developing countries.[57] The theoretical basis for all these interventions is broadly the same and it is sound—to correct for market failures.

It has been argued that technology development "generally involves a mixture of functional, horizontal and vertical policies, the exact mix varying with the country context and the capabilities of its policy makers". Economically justifiable policies for technological development have been described as "market stimulating" policies which "may involve strong interventions in free markets for extended periods, and in some circumstances may involve doing without markets altogether". There were five implications of these policies: (a) that policies had to correspond to the phase of learning and should change accordingly: those in the infant phases of learning or of R&D development must differ from those in the mature phase; (b) that any policy or programme should involve an experimental phase where alternative configurations were tested and ranked; (c) that there had to be variety in the interventions—with targeted programmes being designed along with horizontal ones; (d) that the objective of policy should be to support not only technological activity but also the generation of innovation-related routines and processes; and (e) that policies should be directed at creating demand for higher-level technological activities as well as at responding to existing demand.[58]

These policies clearly implied a substantial role for Government at all levels. This was justified in that "as long as there are market failures and strategic needs, well-designed interventions will always promote faster development

[57] For a discussion, see Sanjaja Lall and Morris Teubal, "'Market stimulating' technology policies in developing countries: a framework with examples from East Asia", World Development, vol. 26, No. 8 (August 1998), pp. 1,369-1,385.

[58] Ibid., p. 1,370.

rather than free markets"; therefore, at the present time, it is felt that there is need for an analysis of "what kind of interventions work, how they can be designed and implemented and what is needed in the particular circumstances of each country".[59]

However, one can ask whether the strongly interventionist model, which might have been applicable to countries trying to advance in a different and far less globalized world where the pace of change was much slower, still has validity. It is doubtful whether the kind of interventionist and protectionist policies that some Asian developing countries adopted in the past would today be compatible with obligations under the World Trade Organization and other international agreements, or would enable them to attract foreign capital.[60] Moreover, in previous periods, the direction of change might perhaps have been sufficiently predictable by government authorities which, it must be further assumed, had the ability to detect—and to design the correct policies to rectify—market failures. It is perhaps tautological to say that "well-designed policies" will always work better than the free market: in a perfect world with an all-knowing Government with perfect foresight (which is clearly impossible in the fast-moving world of technological progress), all policies would be well designed.

Examples of the kind of policies that Governments used to develop technology are also indicative of the potential dangers in adopting such policies. For instance, under the heading "deepening industrial structure", the policy of Hong Kong Special Administrative Region (SAR) of China was described as "None, leave to market forces", whereas that of the Republic of Korea was characterized by "strong trade and credit interventions to promote capital, skill and technology-intensive industry, especially heavy intermediates and capital goods. Selective export targeting and promotion".[61] Similarly, whereas Hong Kong SAR had no policy to promote large local enterprises, the Republic of Korea had a "sustained drive to create giant private conglomerates to internalize markets, lead heavy industry, create export brands". In sum, there was no such thing as an East Asian approach to technological development—the various regions or countries adopted very different approaches in some of the most key areas for government action.

In addition, arguments in favour of an interventionist policy to correct for market failures are based on the assumption that a country has the administrative capacity to make the correct interventions and that such "market correcting" policies are likely to yield a better result than the policy of letting private firms compete and achieve the best result through trial and error. This is a questionable assumption, as experience from the most developed countries would indicate. The prognostication that, as science grew stronger, technical innovation would be predictable and routine has turned out to be incorrect, indicating that the policy of promoting competition and letting the market determine the best outcome has a lot to recommend it.[62]

Creating research capability and a technologically trained workforce

Although the "market failure correcting interventionist policies" might be less appropriate for the present technological environment than in the 1960s, there is still a considerable role for Government in supporting the technology

59 Ibid., p. 1,382.

60 "The new rules of international trade, investment and the protection of intellectual property rights have rendered many instruments used in the past by the then newly industrializing economies difficult to apply. … (It) is becoming harder to impose local content rules, give infant industry protection, or subsidize targeted activities" (*World Investment Report 1999 …*, p. 223).

61 Lall and Teubal, loc. cit., p. 1,377.

62 "The old messy process of letting a number of different parties make their own bets using their own money and relying on ex post evaluation to decide what course was the right one still has a lot to argue for it over a policy of ex ante technology-wide planning and administered coordination. It appropriately stimulates a variety of approaches in circumstances where it is a mistake to narrow down exploration to a few" (Richard R. Nelson, *The Sources of Economic Growth* (Cambridge, Massachusetts, Harvard University Press, 1996), p. 82). Similarly *The Economist* argued that "the Ministry of International Trade and Industry in Tokyo, which has had more experience than anyone at launching big catch-up programmes in innovation, now unofficially admits that they are a waste of time. The companies invited to join such programmes were doing the development work anyway; they released only their least productive people; and by the time there was anything to show, the world had moved on" ("Survey: innovation in industry", *The Economist,* 20 February 1999, p. 28).

sector. The one policy that the fast-growing East Asian countries had in common was a firm determination to raise the educational standards of the population. Analysts of their growth performance have had very differing points of view on many issues but have shown virtual unanimity in drawing attention to their success in their educational efforts. India's impressive recent growth in its software industry has also been made possible by a large number of highly educated people. Another example of a country that has successfully taken advantage of the opportunities of technology policy is Israel. Israel had long been devoting a large percentage of its GDP to education—6.6 per cent of its gross national product (GNP) in 1995, compared with about 3.8 per cent of

GNP in the developing countries—before its already skilled labour force was augmented, within the space of a decade, by 700,000 people who had benefited from the educational opportunities provided by the former centrally planned economies. Creating suitable employment opportunities for this highly skilled labour force was a major factor behind many of the technology supportive policies adopted by the Government.[63]

The best policy for developing countries to pursue would appear to be to concentrate all efforts on advancing overall educational standards—from the primary school to vocational training and science and technology studies at the university level, including research institutes, depending on the level of technological capabilities that the country has reached. During this process of educational formation and expansion, the private sector should primarily determine where resources for commercial activities should go. This education-based strategy stresses the importance of government funding and organization in building up a national scientific and technological infrastructure from which firms might draw assistance, but would place considerable emphasis on private enterprise, with a "deep skepticism about the value of detailed government planning".[64] The strategy would also place stress on the need to construct the requisite physical infrastructure for the full use of the new technologies and to cooperate with the representatives of technology industries to ensure that appropriate policies are adopted.

The emphasis on education raises questions whether concerns over the brain drain—whereby a country invests heavily in creating an educated labour force only to see its most highly educated workers siphoned off through the desire to find lucrative employment elsewhere—are justified for high-technology workers. As so much of technology is tacit and circumstantially sensitive, those with a training both inside and outside the country are particularly suited to finding profitable ways to adapt their technological knowledge to local conditions, including local markets. Assets in the knowledge-based economy, being largely the products of the intellect, rather than physical structures, are highly movable. In the case of India, with its business environment becoming increasingly favourable to enterprise, many highly skilled Indians were encouraged to develop local industries based on skills they had acquired or improved overseas, and with the assistance of foreign capital (see case study below). Israel and Ireland are two other countries that have been able to attract back with exciting business possibilities those who might otherwise have felt that they could use their skills only abroad.

63 For a fuller description of Israel's technological development, and especially the role that venture capital played, see chap. VIII of *World Economic and Social Survey, 1999* (United Nations publication, Sales No. E.99.II.C.1).

64 See Nelson and Pack, loc. cit., p. 26.

Role of Government in the provision of infrastructure

The case has also been made for technology parks, devoted especially to the development of a particular branch of technology, as well as for a high standard educational system, supported by research institutes. The case for science and technology parks, however, is not straightforward.[65] The existence of a large number of universities and high-quality research institutes in a particular area provides the critical mass that allows for the development of a technological base. This was the case in Silicon Valley in California and Silicon Glen (between Glasgow and Edinburgh in Scotland). When this critical mass—a cluster of universities and high-technology firms, a highly skilled labour force and ready access to suppliers—is present, then a demand often arises for facilities in which to conduct further research. The construction by a Government of such facilities will itself alone not necessarily spur technological innovation. In addition to the cluster of university and industrial research facilities, the existence of a venture capital industry to provide the funds for enterprises to take off, the encouragement of risk-taking by allowing payment in the form of share options and a bankruptcy code that did not penalize too harshly those whose first ventures failed were all elements behind the success of Silicon Valley: the physical buildings alone would hardly have produced this effect.

One advantage of technology parks and other facilities that lead to clustering is that the construction of infrastructure, such as roads and electricity, can be concentrated. It is often cheaper to build infrastructure in one location rather than in a dispersed area. The concentration of research institutes and firms in clusters has several other advantages.[66] Smaller geographical distances are conducive to spillovers of technology and to the diffusion and exchange of knowledge. They also generate advantages not directly related to technology. Clusters, for example, increase the division of labour among firms and attract trained and specialized labour and specialized firms that provide services to producers (such as repair, marketing and accounting services). This enhances the efficiency of all firms involved, which is also referred to as collective efficiency. Clusters can play a role in escaping a poverty trap—at least locally—as they allow for the emergence of specialized firms, realize economies of scale and lead to externalities and virtuous circles. Sometimes a small advantage that a locality possesses in institutions, geography, infrastructure or taxes can ignite a virtuous circle. The fact that, as soon as a small advantage becomes apparent it will attract more companies, augments the initial advantage. Governments can play a role in generating and nurturing clusters. Governments can assist clusters through the provision of land, infrastructure and electricity and through fostering networking, for example, through business associations.

Information technology requires considerable infrastructure in the communications sector. In their attempt to provide Internet access to the population, developing countries are turning to satellite and wireless to achieve telecommunications infrastructure rapidly and cost-effectively. Broadband wireless networks are falling in price, can be rapidly installed and rolled out—especially in rural areas—and bring instant revenues.[67] The needs of developing countries are for one platform for high-quality voice and data plus an easy upgrade path to emerging Internet protocol networks. Yet the provision of Internet access will itself frequently require changes in regulations so as to stimulate private investment and to provide easy access to information.

[65] See, for instance, "Asia online", *The Economist*, 5 February 2000, pp. 64-66.

[66] See, for example, Hubert Schmitz, "Collective efficiency and increasing returns", *Cambridge Journal of Economics*, vol. 23, No. 4 (July 1999), pp. 465-483; and the special issue of *World Development*, vol. 27, No. 9 (September 1999).

[67] See *Financial Times: FT Telecoms*, 24 November 1999, sect. 2, p. XI.

Creating an environment for the penetration of new technology

To benefit most fully from the possibilities opened up by a new technological development, the developing countries need to ensure that the incentives are in place to reward those who seek profitable opportunities from its use and adaptation. The actors are not just local entrepreneurs, but also non-governmental organizations and the foreign producers of technology who wish to encourage its spread. The long-run interests of the major technology producers require that the "digital divide" between the developed and developing countries be bridged so that the use of products embodying their technology spreads to developing countries. For this to be possible, people in developing countries should be able to use the new technology and, in particular, be computer-literate.[68]

One example of profitable use in a poor developing country was seen in the area of mobile phones, where costs of access are decreasing continuously. The cost of laying fixed-line services is avoided by mobile phones, and subscribers have such options as prepaid phones. In Bangladesh, for instance, where about 90 per cent of the country's 68,000 villages had no access to a fixed-line phone, a new industry has emerged—"phone ladies". They buy state-of-the-art cellular phones, using loans from the Grameen Bank, and charge customers for their use.[69] Similarly, in Côte d'Ivoire, cocoa and coffee farmers club together to buy mobile phones.

One of the factors favouring the rapid expansion of access to new technology is the accelerating rate of obsolescence of equipment. The non-governmental organizations, assisted by the suppliers of technology, can take advantage of this. In Brazil, for instance, the NGO Committee to Democratize Information Technology negotiated a multimillion dollar software donation with the United States software company Microsoft.[70] It used this software on personal computers that had been discarded as firms upgraded to set up information technology schools in the poorest neighbourhoods. These schools provided a three-month course in Microsoft applications (Word, Windows and Excel), teaching through exercises that addressed local social issues. The spread of these schools mirrored that of the information technology industry. Having started with 5 machines in 1995, the Committee had expanded, by early 2000, to 110 schools in Brazil, providing work for 262 teachers. About 25,000 students graduated during that period. The aim of the Committee is now to provide all the schools with a link to the Internet, thereby creating an on-line exchange for these poor communities.

The above examples illustrate how the full exploitation by developing countries of the opportunities presented by fast-moving technological change requires an educated labour force and physical infrastructure, particularly in the communications sector. The new technology has made it even more vital for developing countries to make a "big push" to raise educational standards. The raising of such standards requires corresponding attention to health issues. Good health, quite apart from its inherent value, enhances educational performance and intellectual development. These fundamentals—a healthy and well-educated supply of labour—are essential for the effective operation of the array of institutions that support the risk-taking and investment required to reap the full benefits from the new technology: property rights (including intellectual property rights), a tax system that encourages entrepreneurship, a vibrant civil society, and a fair, transparent and speedy legal system. Yet, the very spread of

68 The United Nations is also playing a role in bridging the digital divide. The Secretary-General has proposed that a consortium of high-technology volunteers be set up-a United Nations Information Technology Service (UNITeS) which will train groups in developing countries in the uses and opportunities of information technology. External sources of funding are being sought for this venture. See A/54/2000, paras. 166-167.

69 See "The world in your pocket: a survey of telecommunications", *The Economist,* 9 October 1999, p. 19.

70 See *Financial Times,* 5-6 February 2000, p. X.

the new technology and the need to attract foreign investment for its full development encourage the formation of such institutions, and the sweeping away of those that stand in its way.

International cooperation to foster the transfer of technology

As the present technological change is essentially knowledge-based, there inevitably arise questions of intellectual property rights—to which always stands opposed the general idea that the freest possible flow of ideas is of great value (as, indeed, was seen in the development of the Internet in its early years).[71] The protection of intellectual property is one of the poles of the market economy, needed to foster invention. In the case of present information technology-driven patents, these are being issued not just for a physical product incorporating a new technological advance—such as an improved refrigerator—but also for Internet business methods, such as one-click shopping and reverse auctions, and computer software. There are now serious questions whether the old patent laws are applicable in the present circumstances. In the first place, they hardly work against state-of-the-art competitors—for a company can very quickly get around a patent, as the patent itself contains much useful information. One survey in 1985 of United States companies showed that patent protection postponed a rival's entry by a few months in about half of the innovations, and by over four years in the case of only 15 per cent.[72] In the second place, a span of 17 years of protection as currently provided in the United States seems far too long in the present period of rapid technological change. Changes have been proposed in the United States patent laws, even by those who have filed patents there and profited from the protection provided. One suggestion has been for a period of public comment before the patent is issued (similar to a feature of the European system, which allows the competition to put its case before the patent is issued) and three-to-five-year patents for business method and software patents. The result, it was claimed, could be fewer patents, of higher average quality (as entrepreneurs would not bother to go to the expense and trouble of filing for an inferior invention) and with shorter lifetimes.[73]

It is often argued that strong patent protection systems are in the interest of developing countries, as otherwise business would be deterred from making investments in those countries that incorporate their latest technology. On the other hand, it is also in the developing countries' interest to ensure that protection laws enacted elsewhere do not stifle their own creativity. Patents with longer duration mean that the follow-up innovation by others is deterred.[74] Moreover, stronger patent protection in developing countries is not likely to generate more research in areas solely of concern to developing countries, such as tropical diseases. Actually, patent protection is likely to make drugs more expensive and delay their introduction in developing countries.[75] Developing countries thus have a stake in the implications of patent decisions handed down in other countries, but also in the ongoing international efforts to codify and regulate intellectual property protection. Much assistance in the necessarily complicated negotiations can be provided to them by international organizations and non-governmental organizations or purchased from outside consultants. However, the creation of a strong national capacity to enter into such

71 This dichotomy was discussed earlier in the matter of the patenting of genes. Similar issues arise in the case of the human genome: What is an invention as distinct from the codification or discovery of raw data? How short a DNA sequence should be deemed patentable? According to the patent laws of the United States, the country where most patents are issued, intellectual property rights cannot be given to genetic information unless the data have been specifically linked to a biological function or disease. Yet the dividing line is fuzzy and these issues can be expected to be heavily litigated in the years to come.

72 See E. Mansfield, "How rapidly does industrial technology lead out", *Journal of Industrial Economics,* vol. 34 (1985), pp. 217-223. Cited in Evenson and Westphal, loc. cit., p. 2,270.

73 See the open letter from Jeff Bezos, founder of the Internet retailer, Amazon.com, on the Internet: www.amazon.com/exec/obidos/subst/patents.html.

74 See, for example, Stiglitz, "Knowledge as a global public good" …, pp. 308-325.

75 See, for example, Jean O. Lanjouw, "The introduction of pharmaceutical product patents in India: 'heartless exploitation of the poor and suffering'?", *Center Discussion Paper,* No. 775 (New Haven, Connecticut, Yale University Economic Growth Center, August 1997); and Jayashree Watal, "Pharmaceutical patents, prices and welfare losses: policy options for India under the WTO TRIPS Agreement", *The World Economy,* vol. 23, No. 5 (May 2000), pp. 733-752.

negotiations is crucial. Again, this capacity is itself created by a well-functioning educational system.

The international organizations have a considerable role to play in extending Internet usage to developing countries and fostering strong relationships with the private sector. The United Nations Development Programme (UNDP) has, in the face of some scepticism, put considerable emphasis on helping to bring the Internet to developing countries. For instance, its Africa Bureau has agreed to a $6 million fund to improve Internet connectivity in Africa through the Internet Initiative for Africa project. The World Bank has also been working with the private sector to bridge the technology gap between the developed and developing countries. For example, the International Finance Corporation (IFC), the private sector development arm of the World Bank, set up a $200 million fund with Softbank, a Japan-based global Internet investment fund, to incubate Internet-related companies in 100 developing countries.[76] IFC would bring in its expertise in working with developing countries, and would work with the local governments to develop a regulatory environment and infrastructure so as to allow Internet connectivity and access at an appropriate cost. In this regard, the World Bank group has established a Global Information and Communications Technologies Department to bring together IFC's private sector expertise with its own policy and regulatory advice so as to promote the transfer of information technologies to the developing world.

Softbank would own 75 per cent of the new fund, to be known as Softbank Emerging Markets (SBEM), and IFC 25 per cent.[77] Softbank would nurture new Internet enterprises by investing seed money and by providing an array of technological, legal and management support to quickly turn ideas into solid businesses. It would work with a network of global industry leaders and local partners to speed the creation of Internet-anchored enterprises in developing countries. It would help entrepreneurs in developing countries use established business models to start up locally adapted versions of some of the world's leading Internet companies. IFC would also invest in Softbank's China and Latin American Internet funds, bringing the total commitment to $500 million. The venture was clearly meant to generate a profit for Softbank, but SBEM would also promote free or subsidized Internet service to schools and other educational institutions in order to increase knowledge and access for people in developing countries.

INDIA'S EFFORTS TO ENCOURAGE TECHNOLOGICAL PROGRESS

To gain an appreciation of the most appropriate policy with regard to technology that a developing country should adopt in the present circumstances, three industries in India will be studied. When India became independent in 1947, it embarked on an import-substituting industrialization strategy and, as a result, the economy became heavily regulated and protected through trade barriers. Since the 1980s, the Government of India has started to liberalize the economy, and this process has accelerated since 1991. Liberalization has exposed domestic industry to more intense competition on domestic and international markets but has led to an increase in Indian exports of goods and services from about $11 billion in 1980 and $23 billion in 1990 to more than $51 billion in 1999. Exports have been a major driving force behind GDP growth,

[76] See *Financial Times,* 15 February 2000, p. 24, and World Bank news release 00/92, 12 February 2000. Softbank has made a number of successful investments in leading Internet companies. In Japan, it has formed joint ventures with Microsoft, Cisco, Yahoo!, the National Association of Security Dealers; in the United States, it is a large shareholder in Yahoo!, E*trade and ZDNet; and in Europe, it has established Internet joint ventures with News Corporation and Vivendi. Thus Softbank could provide Internet expertise and strategic relationships with many of the leading companies. It has already developed a strategy of exporting a specific business model, such as Yahoo!, around the world.

[77] The Web address of the new fund is www.SOFTBANK.com/sbem.

which averaged 5 per cent annually during the 1990s. Continued growth of exports depends on the ability to upgrade the level of technology. The present section will look at the efforts to improve technology in three industries: one that is large, long-standing and low-technology (textiles and garments); one that is smaller, younger and high-technology (pharmaceuticals); and one that is intermediate, but rapidly expanding, in size, very young and also high-technology (information technology).

Textiles

After independence, the Government of India regulated and protected the textile industry[78] through a number of measures, including restrictions on automatic looms and loom capacity expansion, firm size limitations, specific production lists exclusively for small-scale industries, import restrictions and export commitments and regulations that compartmentalized the industry on the basis of the raw material used.[79] These regulations placed limitations particularly on the large vertically integrated composite mills, which spin, dye, weave, print and finish fabrics, in order to protect the millions of workers in the small-scale enterprises where hand looms dominated. Between 6 million and 7 million people operate hand looms and most of them are unskilled women in rural areas. In total, the textile industry has about 20 million employees.

During the 30 years after independence, the textile industry showed little technological progress. Weak domestic technological capabilities, which dated back to colonial times, had a retarding effect on modernization.[80] The structure of the industry and of exports changed little during that time and maintained its traditional orientation towards cotton. As exports and domestic demand grew only modestly, there was little investment, particularly in new technology, and the average age of the existing equipment grew older. In 1979, almost 62 per cent of the stock of weaving machinery was more than 30 years old.[81] Regulations regarding the expansion of automatic looms, man-made fibres, FDI and imports of capital goods also slowed down the modernization of technology. By 1980, the stock of FDI in textiles (including leather) amounted only to 320 million rupees (Rs) ($40 million), or 3 per cent of the total stock of FDI, although textiles accounted for 21 per cent of manufacturing value-added.

A turning point in policies

In 1985, the Government started to enhance incentives by removing some of the restrictions on the textile industry. Among the objectives were modernization and strengthening of the international competitiveness of the industry. The 1985 Textile Policy, for example, lifted restrictions on composite mill loom capacity expansion, eliminated the compartmentalization of the industry, ended the discrimination in taxation practised with regard to the composite mills, power looms and independent processing units, emphasized the import of technology and capital and reduced the bias in taxes and tariffs against man-made fibres. During the 1990s, the liberalization of the industry continued, for example, with measures in 1991 and 1992 that eased entry and expansion of large firms. Moreover, FDI has increasingly been encouraged and between 1991 and 1997 Rs 23.7 billion of FDI in textiles was approved. Yet, it was only in the second half of the 1990s that import liberalization of textiles and garments commenced in earnest.

78 The textile industry is defined here according to Standard International Trade Classification, Revision 3, divisions 65 (textile yarn, fabrics, made-up articles, not elsewhere specified or included, and related products) and 84 (articles of apparel and clothing accessories).

79 The present section has benefited from World Bank, "India-cotton and textile industries: reforming to compete", *Report No. 18857-IN* (Washington, D. C., World Bank, 14 January 1999).

80 See, for example, Dwijendra Tripathi, "Colonialism and technology choices in India: a historical overview", *The Developing Economies,* vol. 34, No. 1 (March 1996), pp. 80-97.

81 See Didak Mazumdar, "Import-substitution industrialization and protection of the small-scale: the Indian experiences in the textile industry", *World Development,* vol. 19, No. 9 (September 1991), pp. 1,197-1,214. A 1978 study showed that the automatic looms were not profitable in India because organized labour had resisted using them and because India discouraged the use of synthetic fibre (that the quality of Indian cotton was too low for the automatic looms led to frequent stops as a result of breakage). The production of synthetic fibres was heavily taxed and regulated up to 1985 because these were considered fibres for the rich.

The Government has also provided a number of incentives to exports. The Export and Import Policy for 1997-2002 includes tax concessions, lower tariffs on imports of capital goods and intermediate inputs and exemption from export ceilings for cotton lint and yarn for firms that assume export obligations. As of 1 April 1999, the textile industry pays no tariffs on capital goods imports if export obligations are met.

A Textile Modernization Fund Scheme was created in 1986 by the Industrial Development Bank of India to provide concessional loans to ailing mills, and was similar to a soft loan scheme established in 1976. The Fund disbursed Rs 8.8 billion to 307 mills and was discontinued in 1991. Funds were also established to finance voluntary retirement of workers in the mills and retrain workers who had been laid off. The 1976 and 1986 soft loan schemes facilitated the expansion and modernization in the spinning sector, which was largely conducted by private investors. In addition, about 50 new export-oriented spinning enterprises were set up with the assistance of export incentives provided by the Government. New spinning mills and the modernization of existing mills led to higher productivity in the 1990s, although the average productivity level remains low.[82] The most productive mills are the ones that are export-oriented, although the modernized ones are also competitive on international markets. The cuts in taxes and tariffs on intermediate inputs to man-made fibres since 1985 and export promotion schemes have contributed to investments and to a large increase in exports from this sector.

In weaving, the rapid rise in exports of fabric since 1985 has been largely accounted for by the expansion of the capacity of small-scale power looms, whose productivity is higher than that of the mills. The share of mills in domestic fabric production and exports has been declining, although they still export a higher share of their output than the power looms (40 versus 10 per cent in 1995/96). Yet technological progress has been slow in weaving as well. Automatic looms accounted for 8 per cent of all looms in 1961, and for 25 per cent in 1984; the figure currently remains about 30 per cent, compared with a world average of 80 per cent.

There has been a brisk rise in the number of new firms in apparel production since 1986. Consequently, 93 per cent of the apparel-manufacturing firms that existed at the end of the 1990s had been established between 1981 and 1989. The level of technology in this sector has also benefited from a number of joint ventures with foreign firms. Nonetheless, labour productivity in 1995 was low compared with that of other countries, and this was partly a result of insufficient investments in auxiliary machinery, such as pre-cutting, cutting and processing machines, compared with investments in countries in East Asia.

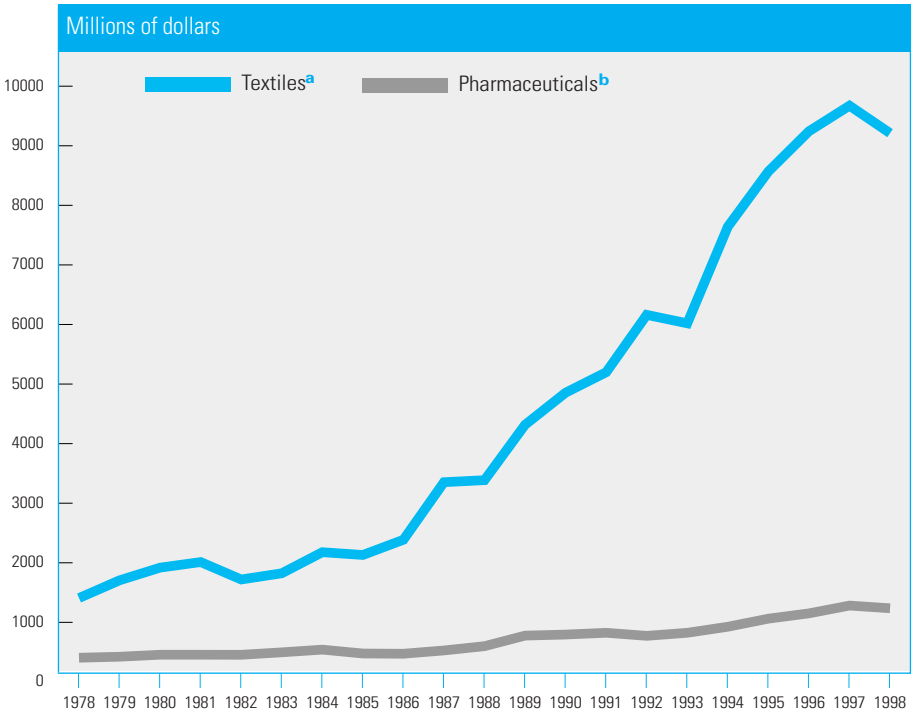
Further growth in textile exports is dependent on technological capabilities

According to one estimate, India had accounted for 38 per cent of all clothing and textiles exports from developing countries in 1953. Subsequently, as other developing countries expanded their exports of clothing and textiles much more quickly than India, the country's share declined to 7 per cent in 1970.[83] In the second half of the 1980s, however, textile exports started to increase more rapidly. Between 1985 and 1997, textile exports increased from $1.9 billion to $9.6 billion, which amounted to an average annual growth rate of 14 per cent (see figure VII.1). Textile yarn has been the most successful,

[82] For example, a survey showed that in 1994 labour productivity in spinning in 85 per cent of the mills had been below the standard set by an industry association (and this standard was below international norms). One of the factors blamed was the Hank Yarn Obligation of 1974, which required spinning mills to process 50 per cent of their deliveries in the form of hank yarn, a type of yarn that is used by hand looms.

[83] See John W. Mellor, *The New Economics of Growth: A Strategy for India and the Developing World* (Ithaca, New York, and London, Cornell University Press, 1976), p. 209.

Figure VII.1.
SELECTED EXPORTS FROM INDIA



Source: UN/DESA.

[a] Standard International Trade Classification, Revision 3 (divisions 65 and 84).
[b] Standard International Trade Classification, Revision 3 (division 54).

especially after 1993, increasing from $69 million in 1985 to $360 million in 1990 and to $2 billion in 1997, and thereby accounting for 21 per cent of all textile exports. Cotton fabrics and clothing have also shown substantial increases but the increases were not as impressive as those of yarn. As a result, textiles enlarged their share in total merchandise exports from 20 per cent in 1978 to 28 per cent in 1997.

However, India's textile exports are most competitive in the markets for goods of low-to-medium quality and price where India's low labour costs and cheap raw materials are most advantageous. Yet further growth in the textile exports depends on aiming at higher market segments where competition is based less on price and more on quality. Higher-quality products are dependent on technological progress. Moreover, as import tariffs have been lowered and exports increasingly encouraged, competition has increased both in the domestic and in the international market, and this has raised awareness of the necessity of technology improvement.

During the colonial period, new technology was often imported, mostly from the United Kingdom of Great Britain and Northern Ireland, and very little effort was made to adapt this imported technology or develop domestic technology for the traditional textile industry. This inclination continued after independence during the 1950s and 1960s. Yet imports of technology require domestic R&D, as the imported technologies often need to be adapted to local conditions, and skills need to be developed to manage and maintain the equipment. The need for domestic technological capabilities has recently increased with the relaxation of restrictions on imports of technology, more FDI and heightened competitive pressures.

In April 1999, the Technology Upgradation Fund Scheme was established; it will be operational for five years, with the main objective of funding textile industries that need assistance for the modernization of technology and equipment. Five percentage points of the interest charged by the lending agency will be compensated by the scheme if the upgrading is carried out according to the rules of the Fund. During 1999, 208 applications were received and 129 were approved.

The Ministry of Textiles commenced upgrading 13 research laboratories during 1998-1999 and two new laboratories were proposed. Moreover, the upgrading of 15 laboratories from the previous scheme has now been completed and they have been made operational.[84] The Ministry of Textiles has also set up computer and Internet facilities to accumulate research and information material to be used to analyse international technology improvements for the benefit of the national industry.

An industrial non-profit research association of 320 manufacturers, the Ahmedabad Textile Industry Research Association, does research in the areas of spinning and weaving, textile chemistry, machine design, energy conservation, pollution control and policy analysis, and provides training and educational facilities.[85] Another association, the Silk and Art Silk Mills Research Association (SASMIRA), carries out research in the areas of man-made fibres, yarn and fabrics.[86]

Pharmaceuticals

India put much emphasis on self-reliance after independence and made the production of low-cost pharmaceuticals one of the primary goals in order to provide affordable medicines to the population.[87] The pharmaceutical industry, like the textile industry, was, for a number of decades, heavily regulated and protected. The Government used price controls to keep domestic prices low, limiting profits in the domestic market. However, price controls were never applied to exports (which account for about a third of production), enabling higher profit margins. TNCs have a much larger presence in the pharmaceutical industry than in the textile industry. The pharmaceutical industry was itself dependent upon the high quality of scientists graduating from India's higher educational establishments.

During the 1950s and 1960s, the domestic pharmaceutical capacity remained relatively small and in 1970 domestic firms accounted for less than 25 per cent of the pharmaceutical domestic market. In 1970, however, the Government of India started to encourage domestic firms to produce drugs. One important policy instrument was a new patent law, the Patents and Design Act of 1970, which became effective in 1972. The permissiveness of this law encouraged the development of local technological capability through imitation and adaptation rather than innovation.[88] Domestic firms have responded by imitating drugs and developing and patenting indigenous processes to make drugs. (One Indian firm, for example, is the world's second largest manufacturer of norfloxacin and ibuprofen.) Introduction of a patented drug by an Indian firm takes usually less than five years. Through computerized databases and the Internet, access to patent specifications has even become easier in recent years.[89]

84 See Government of India, Ministry of Textiles, http://www.textmin.nic.in.

85 See Ahmedabad Textile Industry Research Association (ATIRA), http://www.allindia.com/atira/

86 See Silk and Art Silk Mills Research Association (SAMIRA), http://www.sasmira.org. Associated with ATIRA are also the National Information Centre for Textile and Allied Products (NICTAS), the Industrial Electronic Promotion Programme (IEEP), the Centre for Environmental Counseling and Information (CECI) and the International Centre for Clean Environment and Energy.

87 The present section has benefited from Greg Felker, Shekhar Chaudhuri and Katalin György, "The pharmaceutical industry in India and Hungary: policies, institutions, and technological development", *World Bank Technical Survey,* No. 392 (Washington, D. C., World Bank, 1997).

88 The law did not allow product patents, limited royalties to 4 per cent of the producer's price, put the burden of proof on the patentee and permitted only 7 years of process patent protection from the date of filing or 5 years from the date of granting, whichever was shorter (compared with 16 to 20 years from the date of filing in Europe and 17 years from the date of granting in the United States). See, for example, Lynn Krieger Mytelka, *Competition, Innovation and Competitiveness in Developing Countries* (Paris, OECD Development Centre, 1999). Process patents allow for the reproduction of a product in a slightly different manner.

89 See Lanjouw, loc. cit.

The restrictions on patents, prices and foreign investment contributed to the increasing share of Indian firms on the pharmaceutical market.[90] By 1991, Indian firms accounted for 70 per cent of the bulk drugs and 80 per cent of the formulations produced, and the share of corporations owned by TNCs fell from over 80 per cent in 1970 to nearly 40 per cent in 1993. However, most of the large Indian firms had some foreign equity.[91]

The Government started to reform and liberalize the pharmaceutical industry in 1986. It raised the share of foreign ownership to 51 per cent and larger foreign ownership was approved on a case-by-case basis. Complete foreign ownership is now allowed "where proprietary technology is sought to be protected or sophisticated technology is proposed to be brought in; (and) where at least 50 per cent of production is to be exported".[92] The number of drugs subject to price controls was also reduced, first from 347 to 142 in 1987 and to 76 in 1995. The Government has also encouraged the import of technology by giving automatic approval for technology agreements.

Domestic technological capabilities

The development of domestic technological capabilities was enhanced by the Patents and Design Act of 1970 but it had been building on a long tradition. The first pharmaceutical research institute was established as early as 1904, followed by two others in 1905 and 1907. Research capacity has been built up ever since. Most pharmaceutical research is conducted within the large firms, in research institutes and in nearly 50 universities. Seventy-seven firms have in-house R&D departments approved by the Department of Scientific and Industrial Research. Pharmaceutical companies benefit greatly from the research institutes and universities, through exchanges of knowledge and people. These positive spillovers are facilitated by the geographical concentration of pharmaceutical firms, research institutes and universities around Hyderabad. There are approximately 40 institutions for higher learning in Hyderabad and some of the most important technology and science institutes, such as the Indian Institute of Chemical Technology and the Centre for Cellular and Molecular Biology, are located there. The Indian Institute of Chemical Technology (IICT), for example, a laboratory under the Council for Scientific and Industrial Research (CSIR),[93] conducts research in the areas of process, products, design and engineering know-how. The institute specializes in a number of areas, such as pesticides, drugs, organic intermediates and organic coatings. IICT is sponsored by the industry and has been very successful in transferring technology to the industry. Out of 70 new technologies transferred, 50 are used in commercial production.

R&D expenditures increased during the 1980s and 1990s, with an increasing share having been funded by the private sector. As the Government of India decreased its financial support to research institutes, they had to expand their efforts to obtain private finance for their projects. This has made the institutes more attentive to the demands of the industry and the industry more aware of the research possibilities. R&D expenditures account for about 1.5 per cent of sales, a figure that is low compared with the international average of 10 per cent but high compared with the figure for other developing countries. Yet, some of the firms spend nearly 5 per cent of sales on R&D.

90 The Foreign Exchange Regulation Act of 1973 had required that foreign equity not exceed 40 per cent, although for companies that were using high technology and were predominantly export-oriented, foreign equity was allowed to increase up to 74 per cent. This Act was effective all through the 1980s.

91 Bulk drugs are the active chemical ingredients in pharmaceuticals and formulations are the final products, such as tablets, capsules, injectables and syrups, sold as a brand or generic product.

92 See Government of India, Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals (http://www.nic.in/cpc/chem3.htm, retrieved 11 February 2000).

93 Many of the public research institutes in India are part of the Council for Scientific and Industrial Research (CSIR). CSIR is an autonomous body of the Department of Scientific and Industrial Research and was constituted in 1942 by a resolution of the then Central Legislative Assembly. The main objective of the council is to promote science and its application and it has more than 40 bilateral programmes with 30 countries to increase global competitiveness through international networking. Another laboratory under CSIR is the Central Drug Research Institute (CDRI), which conducts research for pharmaceutical firms in and outside India and is one of the few research institutes that is focusing on drug development.

Protection extended to domestic industry and the Patents and Design Act of 1970 contributed to the gradual expansion of domestic technological capabilities in pharmaceuticals, within firms and laboratories. This capability first allowed Indian firms to capture an increasing share of the domestic drug market and then to export. Since the 1980s, the trade balance in pharmaceuticals has been positive. Exports have benefited from relatively low costs and various policy measures, such as the absence of price controls and income taxes on exports and export incentives such as those applied to textiles. In addition, a Pharmaceutical Export Promotion Cell has been created within the Ministry of Chemicals and Fertilizers to provide information and training on standards and quality control for potential exporters. Exports of pharmaceuticals increased from $57 million in 1978 to $901 million in 1998 (see figure VII.1). Exports of bulk drugs have grown particularly rapidly in the 1990s and accounted in 1996-1997 for 61 per cent of all pharmaceutical exports; but growth rates have fluctuated rather sharply and the strong growth of the late 1980s has not been repeated since. The pharmaceutical industry's share of total exports increased from 0.9 per cent in 1978 to 2.7 per cent in 1997.

Yet India's share of the international market is about 1 per cent and it has had to change radically its permissive patent provisions to conform with World Trade Organization requirements. It has undertaken to put in place provisions so that pharmaceutical patents will be respected by the year 2005. This will necessitate a shift from copying drugs to developing new medicines. Accordingly, in 1999, the Government of India constituted a Pharmaceutical Research and Development Committee to recommend measures to strengthen domestic R&D capability. The report of this Committee[94] recognized the changing global environment, and its recommendations included the establishment of product patents by 1 January 2005 and exclusive marketing rights in the interim period and the increasing possibility of an international division of labour in R&D, where outsourcing would play a larger role. India, for example, could develop a capability for subcontracted clinical research and testing. The Committee also recommended the establishment of a Drug Development Promotion Foundation, which would promote, coordinate and finance R&D. It also proposed a 1 per cent surcharge on all drugs sold in India to finance the expansion of R&D, which would be administered by this Foundation.

94 See Government of India, Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals (http://www.nic.in/cpc/pharma10.htm, retrieved 23 March 2000).

Information technology

Of the three industries being studied, India's information technology industry is undoubtedly the most successful and points the way for future policy. Exports of information technology, particularly of software, have grown very rapidly over the last decade, reaching about $2.6 billion in 1998-1999. In its initial years, the sector received little direct support from the Government, but benefited greatly from the human resources that have been created partly with government support. The Government also has a role in providing an enabling environment for the private sector, building infrastructure, creating institutions and facilitating networks among producers.[95]

95 The Indian software industry is discussed in *Poverty amidst Riches: The Need for Change: Report of the Committee for Development Policy on the second session* (3-7 April 2000) (United Nations publication, Sales No. E.00.II.A.4), chap. II, box entitled "The case of India".

Education as the basis of success

The Indian software industry, similarly to the pharmaceutical industry, owes its success to a considerable extent to human capital. India had built up the crit-

ical mass of educated people necessary to take advantage of new developments in information technology. In 1996/97, over 6 million students were enrolled in India's tertiary education sector, the largest number among any developing country. Yet, by comparison with other developing countries that have not enjoyed such spectacular success with the new technology, India's enrolment ratios are not exceptional. For instance, its gross enrolment rate for tertiary education, at 6.4 per cent in 1995, was lower than the average for all developing countries, of 9.1 per cent.[96] However, the Indian educational system produced graduates of a very high standard, with many of them being sought by both Indian and foreign information technology companies.

The example of software exports by India highlights the fact that support to all levels of education, including the highest, is essential to the development of high-technology industries. Largely because of their connections with Silicon Valley in the United States, some highly motivated and qualified Indian entrepreneurs were able to exploit the advantages that came from the existence of this highly trained labour force. Indian entrepreneurs built up a software exporting industry of nearly 900 firms, employing about 280,000 engineers, the second largest group of software engineers in the world after the United States.

Apart from its large pockets of highly educated English-speaking labour, coming often from India's many educational institutes, India had apparently few advantages at the start of the information technological revolution from which it has benefited so dramatically. Its telecommunications were poor and expensive and it is still one of the least networked societies in the world, with fewer than 4 million computers.[97] The physical infrastructure in Bangalore, one of the centres of India's software industry, was poor: the roads were sub-standard and power supplies were erratic.[98]

The very success of the high-technology sectors provided a spur to educational advance, thus creating a positive feedback—or virtuous circle—as discussed in chapter VI. The rapid growth of the information technology sector has strained the capacity of existing institutions to cater for the demand for graduates, and is adding to pressure for their expansion, without jeopardizing quality.[99] The Government of India proposed to establish an Indian Institute of Information Technology in every State.[100] At this point, funding can be partly private. The Indian software industry gave a very clear example of how a good education can be translated into wealth: no other industry had created so many millionaires in such a short span of time as the software industry. These millionaires themselves can make donations to the institutions from which they graduated.[101] Other sources of funds are Indian and foreign technology companies themselves.[102] The private development of some parts of the tertiary education sector could be encouraged by the potential high earnings of graduates and the need of the high-technology industries for a larger supply of graduates. Finally, the success of the high-technology sector in India brought home the importance of education in general for the country's development, and of the many shortcomings in all education sectors, which could be addressed with the help, *inter alia*, of information technology.[103]

Infrastructure and institutions

India has developed a network of Software Technology Parks which offer the following benefits: duty-free imports, 100 per cent foreign equity, no cor-

96 See United Nations Educational, Scientific and Cultural Organization (UNESCO) *Statistical Yearbook 1999* (Paris, UNESCO, 1999) and UNESCO, *World Education Report, 1998* (Paris, UNESCO, 1998).

97 See *Financial Times Survey: India,* 19 November 1999, p. VI.

98 See *Financial Times Survey: India:* Information Technology, 1 December 1999, p. V.

99 See *Financial Times,* 24 April 2000, p. 17.

100 See Nirumpam Bajpal and Navi Radjou, "Raising global competitiveness of Tamil Nadu's IT industry", *Economic and Political Weekly,* vol. 35, No. 6 (5 February 2000), pp. 449-465.

101 Mr. Kanwal Rekhi, who heads The Indus Entrepreneurs (TiE), a group of Silicon Valley executives and entrepreneurs originating from the Indian subcontinent, thought that Indian entrepreneurs would be able to provide $1 billion to the Indian Institutes of Technology (reported in *The Economic Times,* 25 April 2000, p. 13, and reproduced on the Web pages of the Indian Ministry of Technology (www.mit.gov.in)).

102 For instance, in April 2000, the Motorola Company signed an agreement with the Indian Institute of Information Technology (IIIT) to set up the Motorola School of Communication Technology. The proposed school was a state-of-the-art centre, which would not only provide higher education in the most advanced telecommunication technologies, but also offer research and development opportunities for students and faculty within India. Reported in the *Times of India,* 25 April 2000 and reproduced on the Web pages of the Indian Ministry of Technology (www.mit.gov.in).

103 NASSCOM's October 1999 programme that it proposed for the Government of India included a target of 100 per cent literacy, through various applications of information technology, including distance learning.

porate income tax for 10 years, dedicated data communication links, single-window government clearance and custom bonding and export certification. Even information technology companies that are not physically located within the parks can have access to them through a satellite-based telecommunication network. Facilities at the parks are being expanded—for instance, Bangalore spent $5 million on its new communications centre to enable it to offer multicasting, webcasting and videoconferencing services.

The Government of India is taking steps to increase access to the Internet. As part of the new telecommunications policy adopted in 1998, the Government encouraged the formation of private Internet providers. They would not have to pay any licence fees.[104] Together with liberalizing the provision of Internet services, the Indian Government's Department of Telecommunications significantly lowered the price of using its bandwidth. Further liberalization steps included the Government's inviting applications from companies to set up their own international gateways. Previously, only the State-owned long-distance telephone company could operate an international gateway. Indian industry has also been pushing for private companies to be allowed to invest in their own high-speed fibre-optic links so as to compete with the State-owned monopoly.

The Government of India is working closely with the National Association of Software and Service Companies (NASSCOM), which was formed in 1988, to remove obstacles to the software industry's expansion. The association provided a major input to the Government's plans to foster a liberal approach to the setting up of foreign venture capital funds in India: previously, Indian high-technology entrepreneurs had to approach overseas capital markets, especially in the United States, for funds. Instead of several authorities, a single body, the Securities and Exchange Board of India (SEBI) would henceforth vet prospective venture capital funds, and venture capital funds would pay a single 20 per cent tax on income distributed as dividends. They used to pay a capital gains tax as well as the tax on distributed income.[105]

In 1999, in response to the rapid growth of the Indian software industry—of about 60 per cent per year between 1992 and 1999—the Government of India established a Ministry of Information Technology, which NASSCOM hoped would be modelled along "completely different lines than traditional ministries. It should be promotional in nature rather than get into the mode of licences. (It should) think and act at the speed of thought and be open to innovative ideas".[106] There have been doubts among some in the information technology industry about the need for such a ministry.[107] However, NASSCOM welcomes its formation if it increases information technology penetration in the country, promotes applications of information technology in such sectors as education, health care and E-governance and quickly creates the necessary Internet infrastructure. The Ministry of Information Technology sees its main functions as being those of a proactive facilitator, motivator and promoter of information technology, with the goals of spreading information rapidly to the masses and ensuring the rapid spread of information technology.

Two factors should be stressed in connection with India's success. One is the mobility of Indian entrepreneurs. Many of them worked outside India and developed strong contacts among overseas firms, especially those in the United States. They brought these skills back to India and were able to tap into foreign

[104] See *Financial Times Survey: India: Information Technology,* 1 December 1999, p. IV.

[105] See *Financial Times,* 3 March 2000, p. 4.

[106] Comments by Mr. Dewang Mehta, President of NASSCOM, 18 October 1999, reported on NASSCOM's Web page: http://www.nasscom.org.

[107] See comments by Mr. Kanwal Rekhi, who heads The Indus Entrepreneurs (TiE), a group of Silicon Valley executives and entrepreneurs originating from the Indian subcontinent: "They are trying to solve a problem that doesn't exist. The IT industry is very profitable; they haven't needed much financial support from the government. I have a worry that these bureaucrats will find things to do that don't need to be done." Reported in *The Economic Times,* April 25, 2000 p. 13, and reproduced on the Web pages of the Indian Ministry of Technology (www.mit.gov.in).

capital markets to develop the software industry in India. The second factor is that location is less relevant for the digital economy in the sense that the industry is largely based upon the quality and entrepreneurship of its workforce. Whether they are located in India, Silicon Valley or London is less important than the ability of the cluster of high-technology firms to network among themselves and tap into other clusters of similar enterprises, to come up with solutions to problems, such as the year 2000 date conversion problem of computers (Y2K), that the industry could face, and to develop new software packages that meet business needs. The third factor is that Indian entrepreneurs are well educated and speak English, the lingua franca of the computer revolution.

The Government of India is placing heavy reliance on knowledge-based industries for assuring India's future economic growth, the possibility being foreseen of India's reaching what it has described as economic maturity in 30 years—a period much shorter than the nearly 150 years that it took the United Kingdom or the 100 years that it took the United States to achieve this stage.[108] The Government sees that information technology is an area where India can speedily establish its global pre-eminence and that information technology has a great potential to modernize the national economy (industry, agriculture and services), the educational system, communications and the Government-citizen interface.[109] NASSCOM wants to work with the Government to take full advantage of the possibilities opened up by information technology in the areas of education, employment, entrepreneurship and economy. It can see the industry helping to increase the levels, spread and standards of education, generating 5 million new jobs over the next five years, encouraging entrepreneurship and contributing towards the growth of exports and the economy.[110] The budget of 2000 gave firms in knowledge-based industries, such as information technology, pharmaceuticals and biotechnology, tax breaks on their research and development expenditure, a ten-year tax holiday, support from a $34 million R&D fund set up by the Government and tax exemption on export earnings if the company is located in an "exported-oriented zone".[111]

Unleashing India's creativity and intellectual talents

The three examples discussed above illustrate how, over the decades, India has been able to build important technological capabilities in textiles, pharmaceuticals and information technology. However, different policies produced varied outcomes, and left the industries with different challenges for the future—and with varied degrees of the wherewithal to meet them. Technological progress in textiles probably suffered from the heavy regulatory and protectionist environment which, once lightened, enabled considerable expansion to take place. In pharmaceuticals, direct support to industry helped, but it did not fit out the industry for competition in the present environment where patent protection laws are to be strengthened to conform with international norms. It consequently has had to change. The information technology sector has been largely free from specific regulations and has been extremely successful, with the inventiveness and creativity of Indian entrepreneurs being allowed full rein. It might be argued that textiles and pharmaceuticals can be damaged by deregulation and liberalization as the creation of technological capabilities is a slow, complex and long-term process that is both costly and

108 See the Prime Minister's Council on Trade and Industry, Recommendations of the Task Force on Knowledge-Based Industries (at http://pmindia.nic.in/pminitatives/a1.htm).

109 Open Web letter from Shri Jaswant Singh, Chairperson, National Task Force on Information Technology and Software Development, Deputy Chairman, Planning Commission, 28 May 1998 (at http://pmindia.nic.in/pminitatives/t1.htm).

110 See the introduction by Mr. Dewang Mehta, Chairman of NASSCOM, in the Strategic Review, at http://www.nasscom2000.com/strategic.htm.

111 See *Financial Times,* 8 May 2000.

risky, while liberalization and deregulation can be implemented overnight.[112] Yet this is hardly an argument for regulation and Government's micro-managing the industries, as shown by the success of the software industry where specific government policy did not play a role.

The software industry's success points to the vital importance of the educational sector in creating the abilities necessary to develop and run high-technology industries. Upgraded capabilities have contributed to the competitiveness of the textile and pharmaceutical industries during a period when their markets have been liberalized, incentives enhanced and export opportunities increased. They remain particularly crucial in light of the changes that India is facing as a result of the implementation of international agreements. These agreements include the phasing-out of the Multi-Fibre Arrangement, which will be completed on 1 January 2005. This will create new export possibilities. Previously, the textile industry had been a low-technology industry whose competitiveness was largely based on low production costs. In future, sustaining export growth will increasingly depend on higher-quality products that require more R&D. The pharmaceutical industry can no longer depend solely on imitating products and low production costs. Moreover, India is committed to developing by the same date, 2005, a stronger patent law that will grant product patents, the granting of such patents not being possible under the current patent act. The industry's future success will be determined by its ability to invent and innovate new products.

The software industry has been export-oriented from its inception. Its very existence and success on export markets were to a large extent a result of the technological capabilities. Yet, its ability to continue to take advantage of the rapidly growing market for information technology is dependent on persistent efforts to upgrade technological capabilities, especially because they are quickly out of date in this field where developments are very rapid. These efforts become even more important if India wants to shift from low-level offshore programming to markets with higher profitability like packaged software.[113]

The Government can play an important role in enhancing technological capabilities. Foremost among the areas where the Government has a role is education. Although there is a small segment of highly educated people in India, 38 per cent of the population is illiterate. Reducing illiteracy by increasing enrolment rates in primary schools will be an important condition for raising the level of technology in low-technology industries, such as textiles. And increasing vocational, technical and higher levels of education and training will be important for the technological capabilities in high-technology industries, such as pharmaceuticals and information technology.

The Government also plays a role in infrastructure, such as roads and electricity generation and delivery, and in providing an environment in which private entrepreneurship can thrive. Moreover, government support is also important for the creation of networks, research institutes and, if appropriate, industry marketing organizations.

[112] See, for example, Sanjaya Lall and Wolfram Latsch, "Import liberalization and industrial performance: the conceptual underpinnings", *Development and Change,* vol. 29, No. 3 (July 1998), pp. 437-465.

[113] See Nirumpam Bajpal and Navi Radjou, "Raising global competitiveness of Tamil Nadu's IT industry", *Economic and Political Weekly,* vol. 35, No. 6 (5 February 2000), p. 460.

CONCLUSION

Technology is one of the most important determinants of economic development and the level of technology is one of the most obvious factors that distinguish a poor country from a rich one. Although, there are strong theoretical grounds for government intervention, recent developments, such as the information technology revolution and the globalization of the world economy, have changed the scope of government intervention and called into question the kind of industrial and technology policies that might have been appropriate 20 years ago.

The agenda for developing countries, and particularly the poorest developing countries, is huge. The area where every Government should play a role is education. The first priority must be providing a quality education. In countries at low levels of technology the emphasis should be on primary education, encompasssing the reaching of literacy and numeracy, and on the acquisition of basic skills though training. This will enhance technological progress in agriculture and low-technology manufacturing. When a country develops its technological capabilities, its emphasis has to shift to higher levels of education, particularly in science and technology, and vocational training. At higher levels of technology, research institutes also become important. They can be funded and created by the private sector, although the Government can facilitate their establishment.

Investment in a highly educated labour force is, in the long run, justified in its own right. Yet the creation of a critical mass of educated people also creates a partner for dialogue. This dialogue among local, and also foreign, business, civil society and the Government can be expected to increase in importance. It can help ensure a properly regulated and supervised competitive structure, which fosters risk-taking, the provision of risk capital and the enjoyment of the rewards stemming from the creation of technological advances that benefit society as a whole.

Some countries might be too small to create institutions for tertiary education and research institutes. Regional cooperation between countries, for example, within existing regional organizations, can create the critical mass that is needed in areas of education and research. Cooperation at the regional level allows specific conditions—for example, cultural or climatic ones—to be taken into account.

Governments also play an important role in providing the proper incentives to the private sector and in creating the institutions that improve the functioning of markets. This includes the protection of property rights and patent protection. Yet, the speed and sequencing of the enhancing incentives are crucial. For example, import liberalization before the technological capabilities are in place that will allow certain industries to face international competition, can lead to the destruction of incipient manufacturing sectors, as has been the case in Africa.

FDI can be a source of technology, especially when countries have developed their own technological capabilities. TNCs will be more likely to invest in countries that have skilled labour and national technological capabilities, which make it easier to recruit personnel and find local suppliers for intermediate inputs. The higher the local skills and capabilities, the larger the quanti-

ty and quality of the technology transfers. In addition, Governments can encourage international transfers of technology by attracting FDI through, for example, the construction of infrastructure, the development of technology parks, training, information provision and (tax) incentives .[114]

Governments and the private sector can cooperate in several areas, such as infrastructure, training, research, information-sharing and the setting of standards. Governments can function as a facilitator in these areas, in particular in the creation of networks. One area where cooperation between Governments and the private sector is particularly important is that of the generation of technology that addresses specific problems in developing countries, such as those relating to tropical agriculture and tropical diseases. As the markets for new technologies that are specific to developing countries are too small, the incentives for research—to develop, for example, vaccines against malaria, tuberculosis or human immunodeficiency virus (HIV) or new high-yielding seeds for roots and tubers—are insufficient. International public research programmes, particularly in agriculture, have yielded very high rates of return. The green revolution is the most obvious example. It is essential that the international community maintain its support for these programmes. Additionally, Governments and the private sector especially of developed countries have a crucial role to play. Several proposals that are based on public-private partnership have been aired recently, their aim being to improve the incentives for research into vaccines, for example, by establishing funds that would guarantee the purchase of the vaccines if developed or by providing tax credits.[115]

[114] See, for example, United Nations Conference on Trade and Development, *World Investment Report 1999…*, chap. VII, sects. D.1-D.4.

[115] See, for example, K. Buse and G. Walt, "Global public-private partnerships: part I-a new development in health?", *Bulletin of the WHO,* vol. 78, No. 4 (2000), pp. 549-561; K. Buse and G. Walt, "Global public-private partnerships: part II-what are the health issues for global governance?", *Bulletin of the WHO,* vol. 78, No. 5 (2000), pp. 699-709; Michael Kremer, "Creating markets for new vaccines, part I: rationale", *NBER Working Paper,* No. 7716 (Cambridge, Massachusetts, National Bureau of Economic Research, May 2000); and Michael Kremer, "Creating markets for new vaccines, part II: design issues", *NBER Working Paper,* No. 7717 (Cambridge, Massachusetts, National Bureau of Economic Research, May 2000).

VIII THE ROLE OF INSTITUTIONS AND INSTITUTIONAL CHANGE

Institutions have always been considered central and indeed a prerequisite of development. Many philosophers from all different cultures have struggled over the centuries with outlining the set of institutions that assure material advance. While they have all helped build up the consensus that prevails today, a decisive theoretical advance took place in the eighteenth century, before the Industrial Revolution. Even before he wrote The Wealth of Nations, Adam Smith outlined in his other major work the kinds of institutions that would enable, inter alia, his "invisible hand" to function to everyone's benefit. He showed that, without the appropriate institutions, progress would be thwarted and human wickedness would hold sway: "The characters of men, as well as the contrivances of art, or the institutions of civil government may be fitted either to promote or to disturb the happiness both of the individual and of the society. … What institution of government could tend so much to promote the happiness of mankind as the general prevalence of wisdom and virtue? … The fatal effects of bad government arise from nothing, but that it does not sufficiently guard against the mischiefs which human wickedness gives occasion to."[1]

This moral content of institutions—to promote the happiness of the individual and of society and to restrain the individual's tendency to evil—was central to the early political economists because civil and religious wars were a common feature of Europe at the time. A Government's duty was to prevent the practice of such vices, and to promote individual happiness. One of its first duties was to educate its citizens so that they would be able to perform their full role in society and become better people, more able to restrain their passions. Other duties of the Government were to provide for honest and fair justice and individual security—equal access to the courts, secure property rights and the greatest possible freedom from violence from others.[2]

These ideas were being developed in countries that were not necessarily the most successful economically. However, in the century that followed, those countries that put in place a set of institutions designed to promote justice and the rule of law and to ensure property rights and individual security prospered economically. Their temptation was to think that this economic success derived from some form of superiority and that they would be able to assure the advance of other peoples by transposing their institutions to them. The colonialists did bring in some useful institutions, many of which were retained after independence. However, they usually ignored existing local institutions that had previously ensured domestic tranquillity, but which were swept away. If

1 Adam Smith, *The Theory of Moral Sentiments,* (1759) (Oxford, United Kingdom, Oxford University Press, 1979), part IV, chap. 2, p. 187.

2 The British had relied upon an unwritten Constitution and major documents, such as the Magna Carta of 1215 and the Bill of Rights of 1689, to ensure that the Government fulfilled its duties and that its powers were limited, whereas the Americans used a written Constitution for this purpose.

they had been allowed to evolve naturally, these local institutions might have served their countries better over the longer term. For example, one of the most successful African countries—Botswana—was relatively neglected by the colonial authorities and was able to preserve its traditional institutions, which served it well in the negotiations that it conducted with its international business partners (see box VI.2).

The present chapter examines the role of institutions, defined as the formal and informal norms and rules of human society that shape the environment within which human and physical capital and technologies operate. In particular, it examines the types of institutions that are needed in order for a low-income country to start on a path of sustainable growth. Early development economists, such as Arthur Lewis and Gunnar Myrdal, emphasized the importance of institutions as an essential foundation for growth. In subsequent decades, perhaps because the existence of well-functioning institutions was taken for granted, most economists focused on investment, labour, technology and education as the main factors that had to be given attention in order to secure economic growth.[3]

In the 1990s, institutions regained the attention that had been assigned to them by the earlier economists as a result of several experiences at that time. The lower-than-expected performance of the African and Latin American economies after the adoption of market-oriented reforms, and the very weak performance of several of the economies in transition, after price reforms and the implementation of privatization programmes, pointed to the need for appropriate institutions to guide and buttress economic activities. The former centrally planned economies, which did not have institutions to guarantee the most basic rights—secure property rights and speedy access to a fair tribunal—demonstrated the essential role that institutions play in market economies. The Asian financial crisis provided a further illustration by demonstrating that financial liberalization without a proper set of domestic and international financial regulations could disrupt the functioning of the existing financial industries, and thereby cause a severe economic crisis. Finally, developments in some countries since the end of the cold war have demonstrated the connection among weak institutions, civil strife, warfare and economic decline.

Institutions mould the way individuals or groups of individuals interact to get things done.[4] They can include formal institutions like laws and regulations, explicit contracts and market exchange rules, and informal ones like common values, norms, customs, ethics and ideology.[5] In many cases, special care has to be taken to distinguish between the operation of an institution in practice and its formal expression—for example, there are instances of dictatorships or kleptocracies operating under the guise of a seemingly democratic constitution. Economic, political and social institutions set the constraints within which individuals behave and the framework within which tangible and non-tangible resources are used. If such institutions are not conducive to, or lack the capability of, moulding individual actions and resources in a mutually beneficial way, a society will be unable to take full advantage of its available resources. Formal and informal institutions determine some of the most important sources of economic progress, particularly investment and technological progress. Without proper property rights, entrepreneurs have few incentives to commit their resources for long periods. If investments in a mine, a farm or a factory

3 For a survey of the economic growth literature, see Robert J. Barro and Xavier Sala-i-Martin, *Economic Growth* (Cambridge, Massachusetts, MIT Press, 1999). A critique of the growth theory from the institutional point of view can be found in Richard Nelson, "How new is new growth theory?", *Challenge*, vol. 40, No. 5 (September-October 1997), pp. 29-58.

4 "Institutions are the rules of the game in a society, or more formally, are the humanly devised constraints that shape human interactions" (Douglass C. North, *Institutions, Institutional Change and Economic Performance* (New York, Cambridge University Press, 1990), p. 3).

5 For a survey of institutions and economic development, see Justin Yifu Lin and Jeffrey B. Nugent, "Institutions and economic development", in *Handbook of Development Economics*, vol. IIIA, Jere Behrman and T. N. Srinivasan, eds. (Amsterdam, Elsevier Science, 1995), pp. 2,301-2,370.

can easily be seized by others, including the Government, there will most likely be little investment and a country can easily be trapped at a low-income equilibrium, or even worse, slip into anarchy and chaos.

These experiences have provided a number of important lessons regarding the role of institutions. Firstly, the market mechanism is the most powerful instrument for the generation of wealth, but alone it cannot solve all of the problems associated with economic transformations, such as those involved in accelerating development. The market mechanism must be supplemented or strengthened with an appropriate set of institutions, particularly rules and regulations related to economic activities.[6] Secondly, institutions vary across time and space and need to be continually updated and upgraded to adapt to the changing environment and to respond to emerging problems. Thirdly, there are factors embedded in institutional structures that make institutional change difficult.

Despite these inherent difficulties, successfully creating and changing institutions are possible. One important element in changing institutions is widespread participation in decision-making processes, which enables the creation of the critical mass of support needed to change institutions. Substantial participation in the negotiation of the changes by all the parties may slow reform processes. However, it is the necessary institutional mechanism that can reconcile the diverse, and often conflicting, interests of those involved and thereby ensure that the new institution is sustained and can contribute to sustained growth in the long run. Moreover, as was demonstrated by the demise of central planning, the speed of change in the modern, globalized world and the large number of different actors involved rule out the possibility of efficiently concentrating economic decision-making in the hands of a small group.

MARKETS AND INSTITUTIONS

After the Second World War, considerable emphasis was placed on government intervention in economic activity, but this came under increasing criticism during the 1980s. An approach relying more on markets and less on government intervention spread to many developing countries and economies in transition. Reforms throughout the world enhanced the role of relative prices in allocating resources. Proper price signals in markets were thought to generate the best incentives for an economy to undertake efficient private production and investment and thus grow autonomously. The shift towards market-oriented mechanisms included financial markets, leading to financial liberalization in many countries.

Markets, however, cannot operate in a vacuum. Several institutions are crucial to the proper and smooth functioning of markets and to the reduction of the imperfections of markets. Institutions are needed to guarantee that people have adequate control over the returns to their human and non-human assets and activities. Without such control, people have less incentive to undertake and invest in productive activities and invent and use new technologies. For example, peasants who have inadequate control over the returns to their labour have few incentives to work hard. The rule of law and clear contract and property rights make the completion of transactions less costly and more predictable. Without these rights, transactions involving different places or time periods

[6] Roles for Government in social institutions and policies are summarized in *Report on the World Social Situation, 1993* (United Nations publication, Sales No. E.93.IV.2), chap. X.

cannot be negotiated and enforced effectively. Institutions ensure that those who breach a contract are penalized, thereby creating disincentives to doing so. If property rights are uncertain, for example, because contracts are poorly enforced and there is a risk of expropriation, irreversible investments in physical capital and innovative capacity are particularly affected.[7]

Markets ensure that the full benefits from trade are realized and they thus achieve a socially desirable allocation of resources. They also promote efficiency through competition among sellers and buyers and the division of labour in production processes. However, particularly in developing countries, markets may be lacking or may work imperfectly, for example, because of high transaction costs. Market participants therefore receive inadequate or inappropriate incentives and consequently do not fully exploit the potential gains from trade and production; this hinders economic growth. A typical example of this occurs when peasants who are separated from markets because of inadequate roads therefore have no incentives to produce more than they consume. An example of a missing market arises where there is no crop insurance for inclement weather. In such a case, peasants are reluctant to adopt a new and unproved technology; they know their existing technology will meet their low level of subsistence and are not willing to take the risk that an unknown technology will fail them.

There are many ways to deal with markets that are missing or not perfect.[8] Laws and regulations and different combinations of formal and informal institutions can serve to prevent or ameliorate inefficiencies and inequities that may result from market imperfections or incompleteness.

Laws, regulations and trading rules help reduce the costs or uncertainties associated with transactions of goods and services. Transactions across long distances or between time periods are facilitated by clearly defined contract and property rights. Financial regulations, such as the reserve requirements and the capital adequacy ratio imposed on commercial banks, aim at ensuring the stability of the financial markets and the safety of deposits held in these banks. National and international standards for goods and services facilitate transactions in domestic and international markets.[9]

In sum, adequate institutions are needed to facilitate market transactions in many different ways. With the demise of central planning, the market mechanism is almost universally accepted as the primary institution to maximize the potential gains from trade, to facilitate the division of labour, to allocate resources and therefore to expand economic activities. However, institutions, particularly laws and regulations, are indispensable parts of the market economy and the quality of a country's institutions is increasingly recognized as having a direct impact on a country's economic performance.

VARIATION IN INSTITUTIONS ACROSS COUNTRIES AND OVER TIME

There is no one set of institutions that performs optimally for all countries. Each country needs to establish a unique set of institutions that works best in its particular historical, cultural, social and economic context. Because the functioning of a formal institution depends on informal institutions as well, this implies that institutions cannot easily be transplanted from one country to

7 See, for example, Stephen Knack and Philip Keefer, "Institutions and economic performance: Cross-country tests using alternative institutional measures", *Economics and Politics*, vol. 7, No. 3 (November 1995), pp. 207-227.

8 See, for example, Joseph E. Stiglitz, *Whither Socialism?* (Cambridge, Massachusetts, MIT Press, 1994).

9 On the failure of the market mechanism under the presence of information imperfection and the importance of rules that governments, laws and regulations provide to the market, see Joseph E. Stiglitz, "Whither reform?: ten years of the transition", a paper prepared for the Annual World Bank Conference on Development Economics, Washington, D. C., 28-30 April 1999, and the papers cited therein.

Box VIII.1.

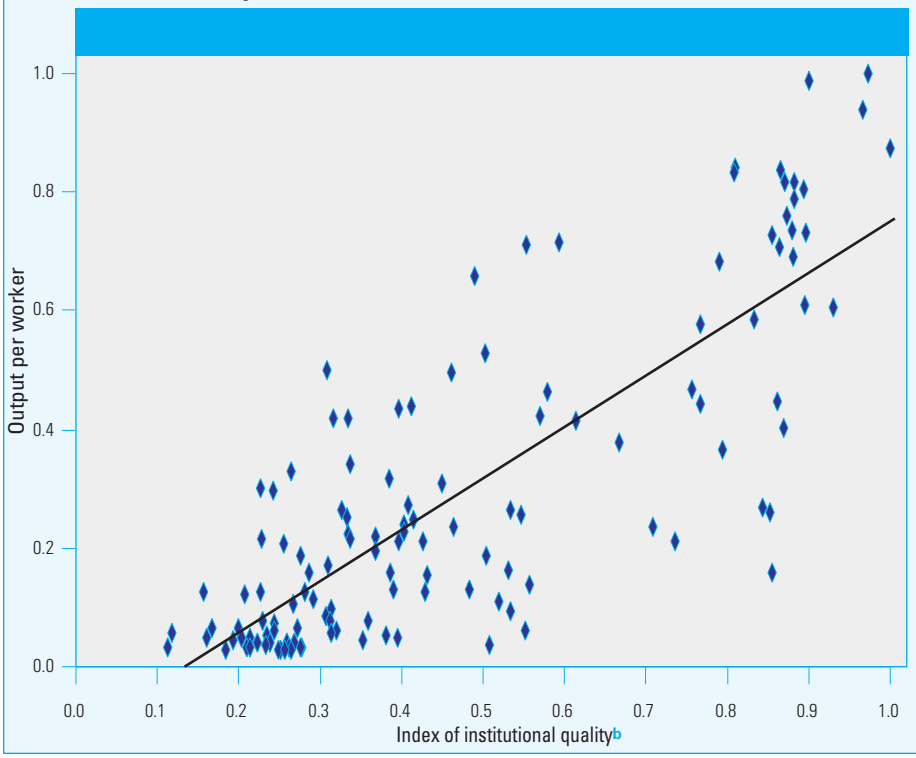
INSTITUTIONAL QUALITY AND PRODUCTIVITY

Economists now put more emphasis on non-economic factors in their attempts to understand the process of economic growth or development. One line of research is oriented towards constructing indices of institutional quality and comparing them with levels of economic activity or growth rates.

Social scientists often measure institutional quality by the effectiveness of government anti-diversion policies (such as law and order, anti-corruption measures and the quality of the bureaucracy) and the openness of the country to international trade. Anti-diversion polices are included in the measure of institutional quality because diversionary or predatory behaviour, such as rent-seeking, corruption and theft, weakens private control over agents' expected returns from their economic activity and, even worse, forces individuals to invest resources in avoiding diversion. The openness of countries as an indicator of institutional strength is controversial. Trade barriers, however, often create opportunities for private diversionary and rent-seeking activities. Freer trade regimes yield less diversion and increase trade and foreign investment with the rest of the world. They lower costs of production and facilitate the specialization of production and the adoption of new technologies and ideas, all of which are important to productivity and its growth.

A study comparing output per worker with the index of institutional quality across countries indicates that higher measured levels of institutional quality are associated with higher output-per-worker variables (see figure).[a] This result, however, does not deny the importance of human and non-human capital accumulation and technological progress in determining productivity. Rather, it points out that there are also additional economic, social and political factors that play an important, perhaps critical role in economic growth and development. This new approach produces additional insights into the growth process and affects the way that policy makers analyse domestic and international economies and devise policies.[b]

INSTITUTIONAL QUALITY AND OUTPUT PER WORKER[a]



Source: UN/DESA, based on the data appendix to Robert E. Hall and Charles I. Jones, "Why do some countries produce so much more output per worker than others?", *NBER Working Paper*, No. 6564 (Cambridge, Massachusetts, National Bureau of Economic Research (NBER), May 1998). The data are available at http://www.stanford.edu~chadj/HallJones400.asc.

[a] Output per worker is measured relative to that of the United States of America, which is the world's highest, and set to equal unity.

[b] The index of institutional quality is the simple average of the index of government anti-diversion and the index of openness to international trade, both of which are scaled from 0 to 1.

[a] See Robert E. Hall and Charles I. Jones, "Why do some countries produce so much more output per worker than others?", *NBER Working Paper,* No. 6564, (Cambridge, Massachusetts, National Bureau of Economic Research (NBER), May 1998).

[b] Keefer Philip and Stephen Knack, "Why don't poor countries catch up? a cross-national test of an institutional explanation", *Economic Inquiry,* vol. 35, No. 3 (July 1997), pp. 590-602; and Rafael La Porta and others, "The quality of government", *NBER Working Paper,* No. 6727, (Cambridge, Massachusetts, National Bureau of Economic Research (NBER), September 1998), represent other attempts in this area.

another. For example, the United States Constitution was adopted (with modifications) by many Latin American countries, but with different results. The historical context, the enforcement of the law and the social norms that are prevalent in Latin America have produced different outcomes.[10]

The developed countries enjoy higher per capita incomes partly because they have put in place over a long period economic, social, governmental and legal institutions that enable technology, labour and capital to be used more effectively, resulting in technological advance and productivity increases. Their political systems have evolved into forms that enable the smooth transition of power from one party to another, making national and local governance relatively stable. While there are different checks and balances to prevent an abuse of power, political leaders, together with capable bureaucrats and experts in various fields, are empowered to devise and conduct economic, social and cultural policies to achieve goals that are deemed desirable by the population. Legal institutions, such as laws, rules and regulations, courts and law enforcement agencies, protect citizens' legal rights, including property rights in tangible and non-tangible assets and contractual rights. Stable governmental institutions ensure the continuation and effectiveness of laws and regulations, or gradual changes in them. Political leaders and civil servants are generally able to prevent economic and social crises that make the return on assets more uncertain and often lower. Political and economic stability and the related stability of economic policies reduce the uncertainty that discourages such economic activities as investment and innovation.[11]

Institutions in developed countries have evolved over several decades, or even centuries. Many of them are similar among countries but rarely are they the same: in particular the role played by the Government differs markedly. In the United States of America, for example, the market mechanism is considered to be the main institution responsible for creating an economically efficient outcome, and its citizens expect the Government to control the mechanism as little as possible. In Western Europe and Japan, Governments are expected to do more to "correct" market outcomes so as to achieve other objectives of society, but the market mechanism is still considered the main institution for resource allocation to different areas of production and consumption. Some of these Governments play active roles in resource allocation among different industries or among different income and social groups through taxes and subsidies. Other Governments have chosen more laissez-faire policies and regard the market mechanism as the chief device for allocating resources. There is no clear dichotomy between the roles of markets and the State; the roles of the two should be complementary.[12]

The challenge is to decide on an appropriate degree of government involvement. This depends on the history, social values and special characteristics of a country, particularly the existing structure of its institutions and the evolution of international accords to limit unfair, Government-subsidized competition. Countries must find the appropriate balance while implementing changes on two fronts: first, by providing citizens with sufficient incentives to support the creation or strengthening of economic activities; and second, institutionally, by complementing market activities and correcting undesirable economic and social outcomes that may result from market activities and related market shortcomings. Moreover, while a strong case can be made for correcting mar-

10 North, *op. cit.*, p. 101.

11 See, for example, Ernest Aryeetey, "Private investment under uncertainty in Ghana", *World Development*, vol. 22, No. 8 (August 1994), pp. 1,211-1,221; and Luis Servén, "Irreversibility, uncertainty and private investment: analytical issues and some lessons for Africa", *Journal of African Economies*, vol. 6, No. 3 (October 1997; Supplement), pp. 229-268.

12 See Dani Rodrik, "Institutions for high-quality growth: what they are and how to acquire them", a draft paper prepared for the International Monetary Fund (IMF) Conference on Second-Generation Reforms, Washington, D. C., 8 and 9 November 1999 (http://www.imf.org/external/pubs/ft/seminar/1999/rodrik.htm).

ket imperfections, caution is needed, especially if the proposed correction involves government action by a poor country without a well-functioning civil service. In these cases, the costs of "government failure" could exceed those of the shortcoming that is being addressed.

Redefining the balance between the Government and the market in the transformation of the economies in transition has highlighted the role of institutions in these countries.[13] For the past decade, these economies have been devising institutions of their own, based on the different initial conditions in each economy at the beginning of its transition. Each started with different government structures and different degrees of autonomy for public enterprises.[14] These initial conditions and existing institutions have affected the capacity of the economy in general, and the Government in particular, to carry out liberalization and stabilization policies. Successful transformation of an economy requires that Governments have "institutions and leadership to catalyse, absorb and manage the process of change, and to manage the changed society".[15]

China has been experimenting with a "dual-track" approach, under which "economic agents are assigned rights to and obligations for fixed quantities of goods at fixed plan prices as specified in the pre-existing plan"[16] (the first track), but the same agents "also may participate in the market at free-market prices, provided that they fulfil their obligations under the pre-existing plan"[17] (the second track).

The economic systems of the developing countries have been very diverse. Some had an economic system similar to that of the former centrally planned economies. Others chose a market-oriented system, but one in which the Government typically takes a leading role in allocating production and investment among sectors and geographical areas. Often Governments are major actors in the economy, producing a large share of the country's goods and services. While government activism in the area of resource allocation does not necessarily lead to socially better outcomes, some countries, particularly in East Asia, have benefited from government interventions that are considered to have facilitated rapid economic development.[18]

Experience suggests that an institutional structure that was adequate to facilitate economic activities for a period of time may become obsolete as economic conditions and their surrounding environment change. Economic history demonstrates the necessity of changing a country's institutions as its stage of economic development and its surrounding economic and social environment evolve. It also illustrates that building institutions or changing them often involves considerable economic and social costs, making it difficult and time-consuming for countries to embark on major changes. Despite the costs and uncertainty involved, changes in the economic and social environment require countries to adjust their institutions if they wish to produce as many benefits for their people as the overall environment offers.

Japan achieved remarkable success in economic growth for about 40 years with a system of relatively strong "guidance" by the Government. The same institutional structure, however, became one of the sources of Japan's economic stagnation in the 1990s. Similarly, in the Republic of Korea, a certain set of institutions was instrumental in increasing gross domestic product (GDP) per capita about 10 times over a 40-year period. Although these institutions changed regularly over the course of the country's development, the financial crisis of 1997-

13 See, for examples, *Economic Survey of Europe in 1992-1993* (United Nations publication, Sales No. E.93.II.E.1), chap. 1, sect. entitled "The siren call of 'shock therapy'", and *Corporate Governance in Transitional Economies: Insider Control and the Role of Banks,* Masahiko Aoki and Hyung-Ki Kim, eds. (Washington, D. C., World Bank, 1995).

14 See Masahiko Aoki, "Controlling insider control: issues of corporate governance in transition economics", in *Corporate Governance in Transitional Economies*....

15 See Joseph E. Stiglitz, "Development based on participation: a strategy for transforming societies", Transition: *The Newsletter about Reforming Economies,* vol. 9, No. 6 (December 1998), pp. 1-3 and p. 13.

16 See Lawrence J. Lau, Yingyi Qian and Gérald Roland, "Reform without losers: an interpretation of China's dual-track approach to transition", *Journal of Political Economy,* vol. 108, No. 1 (February 2000), p. 121.

17 Ibid.

18 See World Bank, *The East Asian Miracle: Economic Growth and Public Policy* (New York, Oxford University Press, 1993).

1998 made clear that some institutions needed a more fundamental overhaul while others were lacking; both shortcomings contributed to the crisis.[19]

The experiences of other countries have important implications for poor developing countries that wish to make their institutions more conducive to growth. Typically, an economic or political crisis ignites demands from the civil sector for institutional change. Major institutional reforms may require a society to bear high economic and social costs, for example, as the result of the dislocation of workers and/or industries. Countries where economic activity has been stagnant for a long period also face a difficult and time-consuming process of institutional reform and building. For many developing countries, particularly the least developed countries, which lack adequate institutions, it is a daunting task to embark on such changes and to commit themselves to many years of effort in order to carry out and consolidate the changes.

Globalization of the world economy is a new and major factor that requires institutional change in all countries and in developing countries in particular. Globalization requires countries to adopt institutional reforms so that they may take advantage of more vibrant international markets, and the speed of globalization is increasing the pressure on countries to undertake these institutional changes as demonstrated by Chile (see box VIII.2). At the same time, globalization may threaten the economic and social structure of a country, especially its social safety net.

Many countries in addition to Chile have successfully transformed their institutions in ways that made them more conducive to development. A common element in many of these successful transformations was the countries' recognition of the incentives that markets give to people as producers and consumers and their transformation of their regulatory regimes accordingly, taking into account the constraints imposed by the existing institutions and the evolving economic and social environment. Reforms often encountered resistance from various groups and some produced unexpected economic and social outcomes. Successful countries reduced the risks associated with the transformation by understanding the diverse, sometimes conflicting, interests among their people and by coordinating these interests at the national and local levels. Greater participation by diversified economic and social groups made it possible for Governments and citizens at large to remain committed to the transformation for a considerable duration. Overall, the evidence suggests that a successful transformation of institutions is not possible without "the participation of all citizens in the decisions that affect their lives".[20]

The diversity of institutions across countries and over time is vast. It would be difficult to characterize in a coherent and concise way the entire economic, social and political commonality of the diverse institutions in many types of countries, although most institutions have some characteristics in common. Some of these common characteristics make it difficult to change institutions.

THE DIFFICULTY OF CHANGING INSTITUTIONS

The institutions of any country are the result of a long process of complex interactions among various economic, social and political forces, both internal and external. Most economic institutions have evolved, in a somewhat unpredictable way, in response to internal and external "disturbances"—such

19 See, for example, Soo-Won Lee and Ann Orr, "The financial restructuring and reform programme in the Republic of Korea", in *Global Financial Turmoil and Reform: A United Nations Perspective*, Barry Herman, ed.(Tokyo, United Nations University Press, 1999), pp. 93-108.

20 Report of the Secretary-General entitled "We the peoples: the role of the United Nations in the twenty-first century" (A/54/2000), of 27 March 2000, para. 84.

Box VIII.2.

ECONOMIC LIBERALIZATION AND INSTITUTIONAL CHANGE: THE CASE OF CHILE

Chile has transformed its economy successfully over the past 25 years through a series of policy changes aimed at creating a more market- and export-oriented economy. These included liberalization of trade and domestic markets, privatization of State-owned enterprises and devaluation of exchange rates.[a] These reforms required complementary changes in the Government's role in fostering development strategies and in the relationship between public and private organizations.[b]

Under the import-substitution policy and protectionism of the 1950s and 1960s, many industrial associations in Chile acted as conventional interest groups; they constantly engaged in negotiations on behalf of their member firms with State-owned enterprises or the Government about the quantities and prices of their inputs and outputs. The market reforms of the 1970s, however, liberalized imports and exports and removed price controls, thereby reducing the role of the associations. At the same time, private firms realized the inferiority of their technologies and of the quality of their products, compared with global standards. Some associations revised their relations with the Government and, in turn, the Government helped them to find ways to improve the production and distribution of their member firms.

The evolution of agricultural and food processing associations in Chile provides an example. During the protectionist era of the 1950s and 1960s, Asociación de Fabricantes de Conservas (ASFACO) (Association of Processed Foods) was the major association of canning firms in Chile. It represented them in negotiations with a Government-owned monopoly producer of steel and tin products. Negotiating with the Government on the prices of member firms' processed foods was another important task of the association, because the country had a system of price controls covering nearly all retail food items. The new Government in the 1970s liberalized and deregulated the Chilean economy, making the traditional role performed by ASFACO less relevant. The new policy allowed imports and thus terminated the Government's monopoly of steel and tin in the domestic market. The elimination of price controls eliminated the need for price negotiations with the Government.

In 1975, the Government created a State agency, la Dirección de Promoción de Exportaciones (Pro Chile)(Exports Promotion Board), with the purpose of encouraging an alliance among agro-industrial firms directly (but not via industrial associations) to improve product quality so as to meet international standards and to explore new markets and new products with expected high external demand. The economic crisis in 1981-1982 added urgency to the Government's aim of promoting export-related activities further and led to the establishment of co-financing programmes by Pro Chile, together with the Export Promotion Fund. Under the programmes, Pro Chile examined export projects proposed by groups of firms in the same industry and, if a project was approved, assisted in securing finance to cover 50 per cent of its cost, with the remainder being financed by the proposing group. In the group only, not individually, could firms receive financing. Simultaneously, Pro Chile organized the association of firms into industry-specific committees, which would submit projects.

In the agro-industy, the programme set out by Pro Chile renewed firms' interests in cooperating with existing associations such as ASFACO to help develop a sense of identity and improve the competitiveness of the industry in overseas markets. At the same time, in their attempts to penetrate external markets, agro-industry firms increasingly recognized that uniformity of product quality among different producers was the key to building their reputation as reliable exporters. Agro-industry firms recognized ASFACO as

[a] As a result, the average GDP growth rate per year rose from 1.9 per cent in the 1970s to 3.2 per cent in the 1980s and to 5.7 per cent in the 1990s. Inflation declined from an average annual rate of over 200 per cent in the 1970s to 10 per cent in the 1990s. The share of exports in GDP increased from 15 per cent in 1970 to over a quarter in the late 1990s.

[b] The analysis here is based on Paola Perez-Aleman, "Learning, Adjustment and Economic Development: Transforming Firms, the State and Associations in Chile", *World Development*, vol. 28, No. 1 (January 2000), pp. 41-55.

Box VIII.2 (continued)

an association that could serve that purpose. While ASFACO was originally a group formed by canning firms, other types of food processors joined the group, which eventually evolved to form an expanded association called Federación de Procesadores de Alimentos y Agroindustriales de Chile (FEPACH)(Federation of Agro-processors of Chile). This association helped to develop new standards based on existing clients' needs and on technical and market information about potential external markets. In response, member firms learned new quality control practices from each other and developed new contractual relations with their suppliers to ensure reliable long-term supplies of high-quality inputs. FEPACH encouraged member processors to submit their products to independent laboratories for scientific evaluation. Chile's fruit exports more than doubled in value in the 1990s, and the country became the largest exporter of fresh and processed fruits. Partly owing to this success, the country now is a net exporter of agricultural products, previously having had large trade deficits in agriculture.

These sectoral activities were complemented by the country's monetary policy and exchange-rate policy. Stable domestic prices and exchange rates, particularly in relation to the United States dollar, mitigated the uncertainties about costs of production and expected revenues from sales and therefore made it possible for agro-firms to formulate medium- to long-term strategies.

Considered overall, "the success of the agro-industry in Chile is not the simple result of government design"[c] It is a result of the adaptation and diffusion of new institutions, technology and types of contracts for firms, which involve both government assistance and industry-wide learning, particularly about export markets. Such efforts have created a flexible system of production, in which firms monitor international market conditions continuously and respond to changes by adjusting production levels or offering new products. Some previous attempts to increase exports had failed, even after new contacts were made with foreign buyers and state-of-the-art equipment had been installed. The Government and the industrial associations had to modify their relationship by creating new institutions in order to take full advantage of the new economic environment. Private firms had to reorient their attitudes towards each other and the Government.

[c] See Perez-Aleman, *ibid.*, p. 45.

as wars, demographic change, new technologies, new ideas (which often transform the economic and social structure), political change, changes in world markets and changes in domestic or international rules and regulations. They are rarely the product of a well-designed plan that has been implemented all at once.

Some economists have argued that the most efficient and effective institutions arise automatically as a result of the market mechanism; this has been termed "induced institutional innovation". New and more efficient institutions will, according to this view, emerge automatically if the costs to establish a more efficient and effective institution are less than the savings it will yield, for example in the form of lower transaction costs. An early example of this phenomenon was the trend, in the sixteenth and seventeenth centuries in Europe, of enclosing land and assigning individual property rights, rather than the use of common-property land, as a result of the rising prices of land and agricultural products which made enclosure more profitable for the encloser. It is hard for this theory to explain, however, why certain inefficient and ineffective institutions remain in existence. The reasons for this are that institutions are self-

enforcing, complementary and subject to economies of scale, path dependency and a collective action problem.

One common characteristic of economic institutions is that, for the institutions to be effective, members of a society or country must have incentives to support them and they, in turn, must serve the interests of the members, in other words, the system must be self-enforcing. Because effective institutions help reduce the costs and uncertainties associated with economic activities, the members of the society tend to support existing institutions. The economic system based on the coexistence of the market mechanism and the presence of various activities and interventions by the Government has survived for a long period because it has served the social goals and the interests of most citizens, who in turn generally support the system. On the other hand, the centrally planned system in Eastern Europe and the Union of Soviet Socialist Republics (USSR) collapsed, largely because it eventually failed to deliver enough of the benefits that the people expected in return for the denial of some of the most basic freedoms; the people, in turn, lost whatever confidence they had had in the system. Despite the important role of popular support, a small group in society can often block institutional change for a long time if it wishes to do so and is powerful enough.

The self-enforcement principle often shapes the new economic regime that emerges when the interests of a country's citizens change. For example, hyperinflation in 1989 and 1990 in Argentina, which had had several previous experiences with high inflation, led to a broad-based recognition of the importance of a stable peso for macroeconomic performance and general economic welfare. The enactment of the Convertibility Plan in 1991 pegged the Argentine peso to the United States dollar at a 1-to-1 ratio and transformed the monetary and exchange-rate functions of the central bank into those of a currency board.[21] Such a change in policy would have been difficult to implement under previous Governments because their exchange-rate policies reflected, to some extent, the conflicts of interest among various economic groups, such as industrialists, labour unions and agrarians, and did not aim primarily at achieving exchange-rate stability.[22] One of the main difficulties in changing existing institutions is that it takes considerable time and effort to form a country-wide consensus regarding the costs and benefits of new institutions compared with those of existing institutions.

A second feature of institutions is the degree of complementarity among them: the proper functioning of one institution usually requires the proper functioning of others. As one example of the complementarity of institutions (discussed above), the proper functioning of a formal institution like a constitution depends crucially on informal institutions like social norms. The agricultural reforms in China, which addressed several institutions simultaneously, also illustrate this point. Households obtained rights to collectively owned land, but these reforms were particularly successful precisely because they were complemented by the liberalization of markets (see chap. V). A similar situation prevailed in the case of Viet Nam (see box VIII.3).

The relation between markets and regulations is another example of this complementarity. The financial crises in the 1990s stemmed, in a way, from the lack of recognition of the complementary role that rules and regulations assume in financial markets. Liberalized financial markets need to be comple-

21 See Eugenio Diaz Bonilla and Hector E. Schamis, "The political economy of exchange rate policies in Argentina, 1950-1998", Inter-American Development Bank, Office of the Chief Economist, *Working Paper,* No. R-379 (April 1999).

22 While distributional conflicts among groups were an important determinant of exchange regimes in Argentina, they have not played the same role in Chile, where inflation and unemployment have had more significant effects on the choice of exchange regimes. See José de Gregorio, "Exchange rate policy in Chile since 1960: political economy and the choice of regime", Inter-American Development Bank, Research Department, *Working Paper,* No. R-377, March 1999.

Box VIII.3.

AGRICULTURAL REFORM IN VIET NAM

Private property rights, including the right to gain an appropriate return from one's own activity or the use of one's own property, play an essential role in economic activities in general and economic development in particular. Producers would have few incentives to produce if they did not have adequate control over the return to the assets that are used in production. Land reform programmes, discussed in chapter V, are attempts to establish the legal and social recognition of rights in the agricultural sector in countries where such rights were not well recognized for historical, geographical or cultural reasons. Guaranteeing private property rights is not, however, the only means to provide adequate economic incentives for farmers.

The increase in agricultural production in Viet Nam is an example of successful changes in incentives.[a] Viet Nam, a country that does not have a fully market-based economy, experienced a long economic decline lasting well into the 1980s, despite economic booms in such neighbouring countries as Malaysia and Thailand. Viet Nam officially launched a policy of renovation (*doi moi*) in 1986, in response to macroeconomic instability and stagnation, but poor weather in 1987 led to rural hunger in the northern part of the country and the economy suffered large trade deficits and high inflation. This led to a series of further reform plans in 1989. Reforms in the agricultural and other sectors included heavier reliance on market-based activities and liberalization of trade-related activities and foreign direct investment (FDI).

Collective farming was replaced with family farming, considered the most natural production unit. Collective farming was perceived to be the cause of the country's agricultural stagnation, because there were few incentives to work harder than anyone else in the group when all produce was shared equally among members. In the new family farming system, land is not privately owned but farmers are allowed to sign contracts – in effect, leases – with the Government on parcels of land for up to 15 years and are given freedom to sell their produce as they wish. The granting of permission for contracts to lease land led to an increase in the total area of paddy fields, although this was accompanied by a drop in the annual growth rate of paddy output per hectare, from 3.7 per cent in 1980-1987 to 2.9 per cent in 1988-1998. Nevertheless, the result was that total rice paddy production increased from 17.0 million to 29.1 million tons between 1988 and 1998 (the latest year for which data are available), or about 5.5 per cent per year, compared with 3.8 per cent per year for the period 1980-1987 (see figure).[b] In the 1990s, Viet Nam became the second largest rice exporter in the world after Thailand, having been dependent on rice imports in the 1980s. With continuing government efforts to introduce new seeds and to expand the use of tractors and pumps, growth of paddy output is expected to become increasingly dependent on the growth of output per hectare, as the availability of more land for rice production is limited.

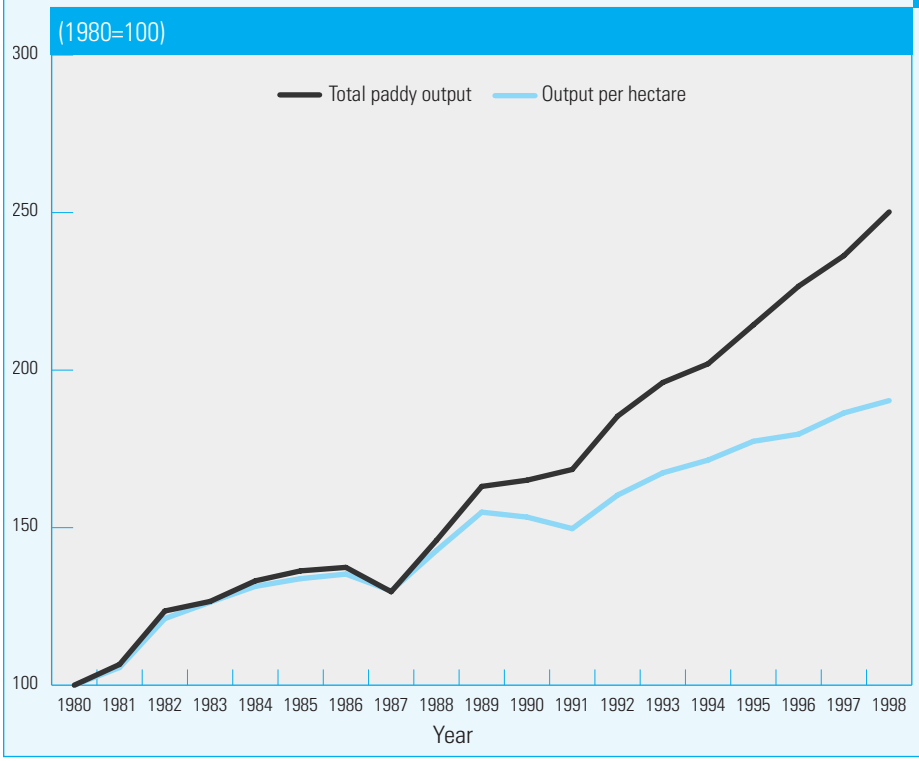
The success of Viet Nam's agricultural sector stemmed from the Government's understanding of incentives. The success of China, where reforms preceded Viet Nam's by several years and which put similar emphasis on incentive-inducing effects (see chap. V), may have had some influence on Viet Nam's choice of policies. The experience of these two countries demonstrates the importance of providing incentives to farmers by combining the liberalization of markets with the permission to lease land. It was not possible to create greater incentives for farmers to "work hard" without permitting freer markets, even if the Government was the issuer of the lease contracts.

[a] This material is based on World Bank, *Viet Nam Deepening Reform for Growth: An Economic Report* (Washington, D.C., World Bank, October 1997); and "Viet Nam: the slow road to *doi moi*", *The Economist* (29 July 1989), pp. 19-22.

[b] Based on General Statistical Office, Social Republic of Viet Nam, *1996 Statistical Yearbook* (Hanoi, Statistical Publishing House, 1997); and World Bank, *Viet Nam Rising to the Challenge: An Economic Report* (Washington, D. C., World Bank, 1998).

TOTAL PADDY PRODUCTION AND PRODUCTION PER HECTARE, VIET NAM, 1980-1998

Box VIII.3 (continued)



Sources: UN/DESA, based on General Statistical Office, Social Republic of Viet Nam, *Statistical Yearbook 1996* (Hanoi, Statistical Publishing House, 1997); and World Bank, *Viet Nam Rising to the Challenge: An Economic Report* (Washington, D.C., World Bank, 1998).

mented by financial disclosure requirements and financial supervision. Without strict disclosure requirements and supervision, liberalized financial markets implicitly "encourage" the financial industry to take excessive risks. Market activities may become more buoyant without regulations, but there is also greater risk of financial crises in the future. On the other hand, strict disclosure requirements and supervision without the liberalization of markets would restrict the potential for market-based transactions, which are vital to realizing the domestic and international financial flows that lead to a more efficient allocation of resources.

The healthy development of financial markets can be expected only when market liberalization goes hand in hand with strict disclosure requirements and supervision. A single institution is a part of a complex web of institutions. Attempting to change a single institution (that is to say, a single element of the entire set of rules and regulations) does not necessarily produce the intended result and, worse, it may unnecessarily disturb the whole system.

In Japan, another type of institutional complementarity is the relationship between the labour market and the schemes of work-related compensation.[23] Japanese workers have been less mobile than their United States counterparts and this is often cited as demonstrating inflexibility in the Japanese labour market. Rather, the inflexibility of the Japanese labour market can be explained by the system of workers' incentives. Their compensation is based on the number of years of association with a single firm: a worker who goes to a different employer generally has to accept a wage reduction. In addition, with low labour

[23] See Masonori Hashimoto, *The Japanese Labor Market in a Comparative Perspective with the United States* (Kalamazoo, Michigan, W. E. Upjohn Institute of Employment Research, 1990); and Kazuo Koike, *Ameriko no White Collar* (White-collar Workers in the United States) (Tokyo, Toyo Keizai Shimposha, 1993).

mobility, employers have more incentive to train their employees. The emphasis on long association with a single company is reflected in Japan's lifetime employment system, the seniority-based salary profiles and the private pension system, in which longer periods with a single company give workers a disproportionally higher pension. The retirement benefits in the national pension schemes also relate to a worker's association with a single company. Thus, the immobility of the labour market and the compensation schemes complement each other and if it were felt that higher mobility of workers would help reduce unemployment, the current employment compensation system and the pension system would have to be changed in order to give workers proper incentives.

A third characteristic of institutions is their often large set-up costs, in either time or money terms, particularly when they are created from scratch. The creation of some formal institutions, such as regulations, might be relatively cheap, but their enforcement and the informal institutions that uphold them are much more costly. Large set-up costs mean that the benefits from new institutions have to be even larger or there would be no incentives to create them. For example, in Europe during the Middle Ages, many new institutions became profitable only after trade reached a certain volume. The introduction of the bill of exchange, common units of weight and courts that enforced contracts took a long time to become effective and were subject to large costs. These kinds of institutional innovations were not needed or were too expensive when trade was at low levels but as trade volumes reached certain levels, several new institutions emerged. That, as a result, transaction costs declined in turn stimulated trade, creating a virtuous circle. Set-up costs imply that institutions are subject to economies of scale, in other words, the larger the volume of production or trade, the smaller the cost per unit because the fixed costs can be spread over more units.

Large set-up costs also produce thresholds. In many cases, an activity has to reach a certain level before the benefits of new institutions can be distributed over a large enough output so that they outweigh the costs. Below that threshold, the economy is in a poverty trap. Old and inefficient institutions prevent development and the low level of development means that the benefits of new efficient institutions are too low to cover the costs. Yet, once the threshold is reached, the new institutions are self-enforced: as output expands and the cost per unit of output declines, more people benefit from the new institutions, and there are fewer incentives to change them.

A fourth, related characteristic of institutions is that it is often not possible to calculate or assign their costs; this gives rise to a collective action problem. The fact that most institutions have the features of public goods means that, once they are created, everybody can enjoy the benefits. Each individual or organization thus hopes that some other entity will bear the cost of creating the new institution because that other entity will also be able to benefit from it once it is created. This can mean that nobody takes action and that society is saddled with inefficient institutions. The public-good features make it hard either to calculate the costs per beneficiary or per unit of output or to divide the costs among the beneficiaries. Governments can circumvent this "free-rider problem" by creating the institutions themselves and using taxes to finance them.

The final characteristic that makes it hard to change institutions is the path dependency that they create, which is also related to other characteristics. A set of institutions is the result of complex processes over a long period of time. Emerging institutions are based, to varying degrees, on existing ones and the choice of new institutions is thus limited by the existing institutions. This path dependency can imply that seemingly small events or chance circumstances may have large and long-lasting repercussions. For example, once the layout of the keyboard on the typewriter has been set, changing it becomes very expensive because of the large set-up costs: everybody who can type has to relearn it.

History plays an important role in shaping both the self-enforcing aspects of and the complementarities among institutions in a particular country. These features evolve in a trial-and-error process of resolving or finding a compromise among diverse interests. The past history of a society forms the present perceptions of its members, including their subjective views of the world, their status relative to others and the role of existing institutions.[24] The views of the members of a society—even if shared by all members—narrow the range of the possible new institutions that a society can expect: there is little point in aiming for an institution that would be rejected by the populace.

[24] See North, *op. cit.*, p. 96.

The processes by which institutions come into existence directly affect their path of evolution. This has an important implication for development; the poor performance of economies in general, and of institutions in particular, tends to persist over a long period of time, creating the possibility of a poverty trap. It will be more difficult to redirect the development strategy of a country towards more market-oriented policies if the market activities of that country have never been given a major role in resource allocation. By the same token, a country where widespread participation has never been part of the tradition will face difficulties and uncertainty in creating mechanisms to encourage greater involvement of civil society and to coordinate its activities.

The five above-mentioned characteristics imply that changing institutions can be difficult and costly. Even when changing an existing institution or creating a new one in a particular country seems to be "rational", in the sense of increasing the overall efficiency and productivity of the economy, the costs of institutional change may make this difficult. People do not always accept the overall-efficiency criterion. In addition, the results of a change, even if expected to be positive, are always unknown, and many people prefer the present that they know to a potentially better future that they do not know. To bring about change, enough people must support it on the basis of their own interests. If they do not, a Government or other authority may have to compensate people who would be disadvantaged by or would bear the costs of the change.

Moreover, an institutional change almost always involves unpredicted costs that are not necessarily related directly to that particular event, but are due to complementarities. Uncertain costs make implementation more difficult. As the financial crises in the 1990s demonstrated, the liberalization of financial markets without a proper set of new regulations can generate unpredicted costs for labour and industrial adjustments or dislocations. Privatization programmes undertaken in the economies in transition in the 1990s also led to some outcomes that were not intended or anticipated. In some countries, the management and employees of former State-owned enterprises (SOE) now have major-

ity control of the privatized firm. In other countries, a small number of entrepreneurs bought enough shares in former SOEs to gain control of the surviving firms. In some cases, the seemingly market-friendly institutions that have evolved are supporting a kleptocracy (where it is in the owners' interest to liquidate their assets as quickly as possible) rather than a functioning market system (where it would be in their interest to use these assets for long-term development). In each of these cases, the result of the privatization is at variance with the outcome that was expected and hoped for.

Institutional structures often create a web of vested interests, which makes institutional change difficult to initiate and slow to implement. Some institutions favour only certain groups and, therefore, are detrimental to society as a whole. If the beneficiaries are also members of an interest group that wields political power, either directly or indirectly, they are likely to block institutional changes. It is even possible that there are powerful groups that might benefit from institutional change but would be averse to it if the distribution of the costs of the change across groups was uncertain and if the group that conceded first was likely to bear a larger share of the costs. The result is likely to resemble a war of attrition.[25]

These various characteristics of institutions can cause a country to become stuck in a poverty trap. If the country's institutions are not conducive to long-term economic growth, it can be hard to change them into institutions that would allow the country to start a process of sustainable growth. However, a strong visionary Government, with a capable, independent civil service that aims to serve all citizens, makes it easier to create institutions that are more conducive to long-term economic growth and to dismantle those institutions that direct the distribution of the benefits of growth towards a particular group.[26]

THE INGREDIENTS FOR INSTITUTIONAL CHANGE

Most institutional change requires a long period of time, with each increment building on the previous one and only the succession of such increments over time developing into an important institutional change. The demise of feudalism in Europe, for example, "consisted of a gradual restructuring of a framework in which the interconnections between formal and informal constraints and enforcement characteristics evolved over centuries".[27] However, not all incremental institutional change takes that long. Several political and mediating institutions and organizations can ease and hasten this process.

In gradual processes, the support of a critical mass of people in general, and policy makers in particular, plays a crucial role in transforming new ideas into institution-building. While wider participation of people in decision-making processes is important in order to encourage new ideas, the formation of a critical mass convinces others to accept those ideas and propels the reform forward. Without the critical mass, new ideas will remain simply ideas and will not materialize as an institution. That a crucial ingredient for the creation of this critical mass is the ability to read and comprehend ideas reinforces the importance of broad-based education. Once a critical mass is formed, it becomes easier for a society to create a new institution, because a sufficient number of people recognize the potential advantage of having a new institution. At the same time, the fact that those who are not part of the critical mass

25 See, for example, Dani Rodrik, "Understanding economic policy reform", *The Journal of Economic Literature, vol. 34, No. 1* (March 1996), pp. 9-41.

26 See, for example, Mancur Olson, *The Rise and Decline of Nations: Economic Growth, Stagflation, Social Rigidities* (New Haven, Connecticut, and London, Yale University Press, 1982), for the role of the powerful vested interests in preventing attempts to effect change and trying to influence the distribution of the pie rather than enlarge it, and the consequences thereof.

27 See North, *op. cit.*, p. 89.

will increasingly see the advantages of the new institution generates a positive feedback.

In this respect, learning from foreign-born institutions or observing the results of such institutions elsewhere can act as a catalyst in forming the necessary critical mass of people. Yet, rarely can foreign institutions be adopted without adaptation to local circumstances. A dogmatic approach limits the possibility of experimenting with new ideas that stem from local sources or are attuned to local conditions, and often becomes the obstacle to the creation of the critical mass necessary to initiate new institutions.

Greater participation in decision-making processes

There are rules in all societies that define the roles of its members and organizations in policy-making; these rules are part of the society's institutional structure. The broadest possible participation in decision-making, irrespective of economic position, enables the widest range of society's members to express their opinions and increases the probability that new institutions, once built, will better serve the interests of the members of society. Broad participation requires extensive coordination and cooperation to resolve conflicts among the society's members, in order to reach a politically stable result. Moreover, when changes are required, it is easier for the members of a freer society to adapt to a new economic environment. Finally, a process with checks and balances prevents the hasty adoption of what might, wrongly, appear to a few to be an appropriate institutional change. Freedom is thus conducive to development.

In general, the ability of a country to allow, generate and coordinate diverse opinions and interests is part of successful development. This ability, in turn, depends critically on a Government's ability and willingness to take into account as many diverse interests as possible while withstanding demands from a minority group, even if that group is powerful. This is exemplified by the experience of some countries in East Asia that have developed procedures whereby the Government gathers information on the interests and concerns of various industries and coordinates their sometimes conflicting views.[28] Ministries for such sectors as transportation, commerce, industry, agriculture and international trade communicate with their corresponding sectoral associations of producers, and utilize their opinions and concerns in devising sectoral production or trade policies. Because they are relatively free from the pressures exerted by individual associations, the ministries for finance and macroeconomic planning can then reconcile the conflicting interests of the different sectors in the light of national economic development goals and policies. These arrangements took advantage of the countries' economic and social structures. While the initial conditions varied to some extent within the region, the relative absence of a politically dominant economic or social group and the relatively narrow disparity among economic and social classes enabled Governments in the region to conduct policies that were beneficial to most members of society. Income distribution in these countries was more equal than in other developing countries and urbanization in the 1970s and 1980s in East Asian countries was less pronounced than in Latin American countries.

Strong coordination efforts at the national level sometimes included the direct involvement of the president or prime minister of a country. During the

[28] See Juro Teranishi, "Industrial interests versus class interests: conflict over income distribution in the economic development of Japan and Brazil," in *The Institutional Foundation of East Asian Economic Development,* M. Aoki and Y. Hayami, eds. (New York, MacMillan, 1998).

1960s, the President of the Republic of Korea regularly attended the Monthly Export Promotion Conference, one of the Government's most important and powerful support mechanisms for export promotion.[29] The Conference—which consisted of the President, the Ministers from the Economic Planning Board and from Trade and Industry, and the directors of public and private export-promotion associations—regularly discussed problems hindering the achievement of export targets. Its main function was to collect information on opportunities and problems in international trade and to make it available to key decision-makers. Such mechanisms could have fostered corruption in a situation where the Government and bureaucracy were not concerned about broad-based development and where proper legal and monitoring systems to ensure accountability were absent. However, in the case of the Republic of Korea, they provided a mix of policies that promoted unprecedented economic success over several decades, to the benefit of all segments of the population.

Extensive participation by civil society can enhance the ability of a country to reduce conflicts, as shown by the experience of Mauritius, a country with a tradition of a large number of civil society associations.[30] Widespread participation in political and social organizations underlies effective representation and consensus-building in society, which are easier in a relatively small country like Mauritius. In the early 1960s, economic conditions in Mauritius were not encouraging, with a mono-crop economic base and an impending population explosion. The country was also ethnically and linguistically divided and a period of civil unrest between social and ethnic groups had preceded its independence in 1968. Given the small size of the domestic economy, the country would have to depend on export-led growth, if it was to grow at all. The creation of the export-processing zone (EPZ) in 1970 was the result of political and social dialogues encouraged by the Government. The dialogues were aimed at resolving a policy dilemma, in which the need to protect import-substituting industries conflicted with the need to expand the access of other industries to international markets. The EPZ provided a means to expand opportunities for trade and employment, without infringing on the protection given to the import-substituting industries. At the same time, the segmentation of the labour market between male workers, who dominated the established import-substitution industries, and female workers, who were employed predominantly in the EPZ, buffered wage pressures as the EPZ expanded its operations. New opportunities were created at the margin, leaving the rest of the economy almost untouched. Eventually, the success of the EPZ, particularly the success of garment exports to Europe, paved the way for more liberal economic policies in the mid-1980s and the 1990s.

Institutions that coordinate and mediate conflicting interests are important for creating public support for those economic policies that are most conducive to broad-based economic growth. In their absence, competing social or economic interests could deteriorate into conflicts about redistributing—rather than enlarging—the pie. In countries where institutions benefit only a small segment of the population, or where they cannot be trusted to protect and promote the national interest, conflicts over economic interests may lead to violent civil strife, as several civil wars have shown. For example, conflicts over the benefits of natural resources have triggered, exacerbated and/or prolonged several violent conflicts in recent years. Institutions that have consensus support

[29] See Chung H. Lee, "Institutions and economic growth," in *Growth and Competition in the New Global Economy*, Ulrich Hiemenz, ed. (Paris, OECD Development Centre, 1999), pp. 137-155.

[30] The present section is based on Rodrik, "Institutions for high quality growth" ....

and benefit all segments of the population are thus a necessary condition for a peaceful society.[31]

The experiences of Mauritius and the East Asian countries also suggest the importance of the role that knowledge of local conditions can play when creating new institutions. In the case of Mauritius, the idea of creating the EPZ was generated in the process of policy dialogues among societal members and was implemented in the context of local conditions. In case of some East Asian countries, the formation of the Association of Southeast Asian Nations (ASEAN) (which was originally created on the basis of a political consensus to oppose the spread of Communism) played a critical role in trade-policy coordination among them. This led to the rapid expansion of intraregional trade in the 1980s. An important source of the economic success of the Republic of Korea and Taiwan Province of China was learning the ideas that underlay the economic policies pursued by Japan and adapting them to accord with local conditions.

While the importance of participation, cooperation and coordination has increasingly been recognized as a result of events in the 1990s, there are some economic and social factors in any country that make institutional change difficult. If it were costless or effortless to change institutions, every country could adopt the best institutional practices very quickly and change them whenever the need arose. Policy makers need to understand the factors behind the difficulty of changing institutions before they embark on such changes.

Difficulties in implementing institutional change have shaped the evolution of particular institutions and institutional changes have shaped the course and outcome of development processes. Experiences with agricultural reform in Viet Nam (see box VIII.3) and with export promotion in respect of food in Chile (see box VIII.2) show that institutions are instrumental to long-term economic development. Every country has its own unique experience in creating institutions to cope with economic, social and political problems.

CONCLUSION

All societies embody a variety of institutions and it is the nature, extent and effectiveness of those institutions that can be critical in determining the extent of a society's success in development. At the same time, there is no unique formula for a successful institution or set of institutions—needs vary across countries, depending on an array of local traditions and circumstances. Equally importantly, institutional needs vary over time. The present rapid pace of economic and social change throughout the world requires commensurate changes in institutions, if countries are to develop.

In order to confront the ever-evolving environment, a society needs to constantly restructure its existing institutions in order to enhance and sustain its economic system. However, as the preceding discussion showed, a number of factors make institutional change difficult. The self-enforcing character of existing institutions, even when their performance is suboptimal, makes it hard to change them. The presence of complementarities among a society's institutions suggests that successfully changing a single institution will often require the overhaul of other institutions. New institutions often require large set-up costs which poor economies can ill-afford, and this might keep them

[31] See, for example, the report prepared by the Secretariat, entitled "Institutional response to Globalisation" for the Group of Experts on the United Nations Programme in Public Administration and Finance at its fifteenth session, 8-12 May 2000 (ST/SG/AC.6/2000/L.6), of 31 March 2000.

in a poverty trap. The public-good characteristics of institutions imply that, in most cases, it will be necessary for the Government to take a lead role in creating them. Finally, the choice of new institutions is limited by the existing ones.

Nevertheless, the examples in this chapter demonstrate that institutional change is possible. In some cases, it can be substantial and fast and may be accompanied by unstable political conditions, but in most cases it is incremental and slow. The successful cases demonstrate that the more widespread is popular participation in a change, the more likely new institutions will be self-enforcing and the more quickly the critical mass in support of the new institutions will be reached. Greater participation helps to reduce possible frictions between existing and new institutions. The more predictable conflicts may be resolved in advance, through consensus-building among the participants, and the less predictable ones can be at least identified and dealt with as they arise. Moreover, countries that were successful in making institutional changes had carefully assessed their existing conditions and devised policies and institutions that took account of local conditions and were within the country's capacity to implement.

The benefits of a participatory policy-making process suggest that gradualism and experimentalism in institution-building have advantages over the so-called big-bang approach (sometimes called the blueprint approach) to reform. This does not imply, however, that ideas often associated with the big-bang approach should be dismissed altogether on the basis of their being infeasible and perhaps extreme in the light of local conditions.

Furthermore, there are possible dangers in gradualism or experimentalism. Firstly, it is necessary to distinguish "between self-conscious experimentalism, on the one hand, and delay and gradualism designed primarily to serve privileged interests, on the other".[32] For useful, self-conscious experimentalism, policy makers need a clear vision of the society that they would like to build and realistic and practical goals that they hope to achieve. Secondly, there is a danger that unsuccessful experiments may not be abandoned, either for the same reasons that explain why institutions are difficult to change or because those responsible are loath to admit failure and abandon their commitment. Thirdly, gradual and experimental institution-building can be very costly in terms of both time and money.

[32] See Rodrik, "Institutions for high-quality growth" ...., p. 9.

As East Asian countries have demonstrated, absorbing foreign-born ideas can be very instructive in guiding institution-building, and advice from the international community can be helpful. Learning from institutions in other countries can reduce the costs, particularly in such technically oriented areas as industrial standards, public-health guidelines and supervision of banking, accounting and security exchange. Yet even institutions in these areas often cannot be transplanted from other countries without adaptation. National expertise is required to absorb imported ideas and policies and to implement them within the constraints imposed by history and the existing institutional structure. Without due regard for local conditions, a top-down approach, which is often associated with the big-bang approach, will fail to produce the desired outcome.

The international community has rightly elevated institution-building to a position high in the development agenda and is now active in helping countries

develop those institutions without which economic life is difficult. However, there is a dilemma involved in attempting to advise a country on what it should do to improve its institutions. The international community has to avoid the mistakes of enlightened dictators and the paternalistic colonialists who, even with the best of intentions, did not respect their subjects' ability to develop their institutions at their own speed and to suit their particular circumstances.

The central dilemma facing any international assistance in institution-building is that institutions can rarely be transferred from country to country without requiring adaptations that incorporate local conditions. Institution-building is a profoundly local activity. It is the local population that can best effect the adaptation but if they feel that an institution has been imposed upon them, perhaps as a condition for obtaining finance, that institution's life expectancy is likely to be short. Moreover, it can be questioned whether international agencies are suited to this long-term commitment to a country, since they usually hope to see speedy results arising from their efforts.

International institutions necessarily work in the first place with Governments, but the Government is only one actor in the complicated process that leads to the adoption of the most appropriate institutions. If international institutions reach out to embrace the wider civil society, there are also pitfalls. They risk creating a culture of dependency, whereby the efforts of non-governmental organizations are directed towards negotiating to obtain aid resources from outside donors, rather than towards improving their own societies. They could also encourage the formation of unrepresentative bodies with poor accountability whose sole aim is to attract foreign funds.[33]

There are nonetheless many potential benefits, as well as pitfalls, in providing outside help to institution-building. Successful economies have displayed a willingness "to acquire knowledge and learning, to induce innovation, to undertake risk and creative activity of all sorts, as well as to resolve problems and bottlenecks of the society through time".[34] This willingness can be assisted by outside help. However, as with any commitment, it cannot be imposed, but must arise domestically. Economic costs in the early phases of institutional change may be large, but as long as members of the society are willing to bear such costs and distribute them equitably, society has an opportunity to escape from a poverty trap. An institutional structure that restricts the participation of civil society and limits the opportunity for experiments is, on the other hand, likely to continue to stagnate.

[33] For a critique of non-governmental organizations, see *The Economist,* 29 January 2000, pp. 25-27.

[34] See North, *op. cit.,* p. 80.

ANNEX

STATISTICAL TABLES

ANNEX
STATISTICAL TABLES

The present annex contains the main sets of data on which the analysis provided in the *World Economic and Social Survey, 2000* is based. The data are presented in greater detail than in the text and for longer time periods, and incorporate information available as of 15 May 2000.

The annex was prepared by the Development Policy Analysis Division of the Department of Economic and Social Affairs of the United Nations Secretariat. It is based on information obtained from the United Nations Statistics Division and the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, as well as from the United Nations regional commissions, the International Monetary Fund (IMF), the World Bank, the Organisation for Economic Cooperation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) and national and private sources. Estimates for the most recent years were made by the Development Policy Analysis Division in consultation with the regional commissions.

Forecasts are based on the results of the April 2000 forecasting exercise of Project LINK, an international collaborative research group for econometric modelling, which is coordinated jointly by the Development Policy Analysis Division and the University of Toronto. LINK itself is a global model that links together the trade and financial relations of 79 country and regional economic models, which are managed by over 60 national institutions and by the Division. The primary linkages are merchandise trade and prices, as well as the interest and exchange rates of major currency countries. The models assume that the existing or officially announced macroeconomic policies as of 7 April 2000 are in effect. The LINK system uses an iterative process to generate a consistent forecast for the world economy such that international trade flows and prices, among other variables, are determined endogenously and simultaneously. The one exception is the international price of crude oil, which is derived using a satellite model of the oil sector. The average price of the basket of seven crude oils of the Organization of the Petroleum Exporting Countries (OPEC) is estimated to rise by 40 per cent in 2000 and to drop by 20 per cent in 2001.

COUNTRY CLASSIFICATION

For analytical purposes, the *World Economic and Social Survey* classifies all countries of the world into one of three categories: developed economies, economies in transition and developing countries. The composition of these groupings is specified in the Explanatory notes that appear at the beginning of the *Survey*. The groupings are intended to reflect basic economic conditions in countries. Several countries (in particular economies in transition) have characteristics that could place them in more than one category but, for purposes of analysis, the groupings were made mutually exclusive. Alternative groupings of countries may be deemed appropriate at different times and for different analytical purposes.

The nature of each of the three categories may be given in broad strokes. The developed economies on average have the highest material standards of living. Their production is heavily and increasingly oriented towards the provision of a wide range of services; agriculture is typically a very small share of output and the share of manufacturing is generally declining. On average, workers in developed countries are the world's most productive, frequently using the most advanced production techniques and equipment. The developed economies are often centres for research in science and technology. Internationally, Governments of developed countries are likely to offer assistance to other countries and they do not generally seek foreign assistance.

Among the developed economies, Australia, Canada, Japan, New Zealand and the United States of America are listed separately. The European countries are grouped as follows: the "EU-15", which comprises all current members of the European Union (EU); and "other Europe", which is composed of those Western European countries that are not members of EU (Iceland, Malta, Norway and Switzerland). Data for the EU-15 cover the current members for all years. The EU countries are further organized into two groups: "EU-11" which comprises all countries that are members of the European monetary union (Austria, Belgium, Finland, France, Germany, Luxembourg, Ireland, Italy, the Netherlands, Portugal and Spain); and "other EU", which comprises the remainder (Denmark, Greece, Sweden and the United Kingdom of Great Britain and Northern Ireland). Finally, the seven largest economies measured in terms of gross domestic product (GDP), namely, Canada, France, Germany, Italy, Japan, the United Kingdom and the United States, are also referred to as the "major industrialized countries" (the Group of Seven).

The economies in transition are characterized by the transformation that they began at the end of the 1980s, when they turned away from centralized administration of resource allocation as the main organizing principle of their societies towards the establishment or re-establishment of market economies. Some of these economies began this transformation while having many of the characteristics of developed economies and others had several characteristics of developing economies. However, for the purposes of the analysis in the present *Survey,* their most distinguishing characteristic is their transitional nature.

The group of economies in transition is divided into three sub-groups. One is Central and Eastern Europe, called Eastern Europe for short, which comprises Albania, Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia and the successor States of the Socialist Federal Republic of

Yugoslavia (namely, Bosnia and Herzegovina, Croatia, Slovenia, the former Yugoslav Republic of Macedonia and Yugoslavia). A second group comprises members of the Commonwealth of Independent States (CIS). The Baltic States (Estonia, Latvia and Lithuania) are the third group. In some cases, data are shown for the former Soviet Union until 1991 and for the aggregate of its successor States from 1992 so as to facilitate analysis of trends over time. Corresponding data for individual successor States of the Soviet Union are included as available.

The rest of the world is grouped together as the developing economies. It is a heterogeneous grouping, although one with certain common characteristics. Average material standards of living in developing countries are lower than in developed countries and many of these countries have deep and extensive poverty. In addition, developing countries are usually importers rather than developers of innovations in science and technology and their application in new products and production processes. They also tend to be relatively more vulnerable to economic shocks.

Based on the classification used by the Population Division and the Statistics Division of the United Nations, the *Survey* uses the following standard designations of geographical regions for developing countries: Africa, Latin America and the Caribbean, and Asia and the Pacific (comprising Western Asia, China and Eastern and Southern Asia, including the Pacific islands).

Other classifications are devised for analytical purposes. Developing countries are classified as fuel exporters or fuel importers because the ability to export fuel or the need to import fuel has a large effect on a country's capacity to import—and therefore on the growth of output, as growth in developing countries is often constrained by the availability of foreign exchange. Fuels, rather than energy sources more broadly, are considered because fuel prices are more directly linked to oil prices, and oil prices are particularly volatile and have a considerable impact on incomes and on countries' capacity to import.

A country is defined as a fuel exporter if, simultaneously: (a) its domestic production of primary commercial fuel (including oil, natural gas, coal and lignite, but excluding hydro- and nuclear electricity) exceeds domestic consumption by at least 20 per cent; (b) the value of its fuel exports amounts to at least 20 per cent of its total exports; and (c) it is not classified as a least developed country. The list of fuel-exporting countries is given in the Explanatory notes. All other developing countries are classified as fuel-importing countries.

A sub-group of the fuel-importing developing countries identified in some tables is the least developed countries. Unlike the preceding groupings, which were created by the Secretariat for the convenience of economic and social analysis, the list of least developed countries is decided by the General Assembly, on the basis of recommendations by the Committee for Development Policy. The Committee proposes criteria for identifying the least developed countries and makes recommendations regarding the eligibility of individual countries. The basic criteria for inclusion require being below certain thresholds with regard to per capita GDP, an economic vulnerability index and an "augmented physical quality of life index".[1] There are at present 48 countries on the list (see Explanatory notes).

A classification of "net-creditor" and "net-debtor" countries is used in some tables. This is based on the net foreign asset position of each country at the end

[1] See report of the Committee for Development Planning on its thirty-first session (*Official Records of the Economic and Social Council, 1997, Supplement No. 15* (E/1997/35)), chap. VI. These criteria are currently under review so that economic and physical vulnerability will henceforth be better reflected in the assessments.

of 1995, as assessed by IMF in its *World Economic Outlook,* October 1996.[2] The list of net-creditor countries is given in the Explanatory notes.[3]

Another sub-grouping is sub-Saharan Africa, which groups together all the African countries south of the Sahara desert, excluding Nigeria and South Africa. The intent of this grouping is to give a picture of the situation in the large number of smaller sub-Saharan economies by avoiding the distortion that is introduced by including the two large countries that dominate the smaller economies of the region in terms of GDP, population and international trade.

DATA QUALITY

Statistical information that is consistent and comparable over time and across countries is of vital importance when monitoring economic developments, discussing social issues and poverty, or assessing environmental change. The multifaceted nature of these and other related issues calls for an integrated approach to national and international economic, social and environmental data.

The 1993 revision of the System of National Accounts (SNA)[4] and the latest edition of the IMF *Balance of Payments Manual*[5] (the IMF Manual) constitute a major step forward in efforts to develop an integrated and harmonized system of statistics that reflects the economic and social change of the past two decades. The 1993 SNA embodies concepts, definitions and classifications that are interrelated at both the macro- and microlevels. Concepts in the IMF Manual have been harmonized, as closely as possible, with those of the 1993 SNA and with the Fund's methodologies pertaining to money, banking and government finance statistics. In addition, through a system of satellite accounts, which are semi-integrated with the central framework of the SNA, it is possible to establish linkages between national accounts data and other economic and social statistics, such as those for the environment, health, social protection and tourism.

Governments are increasingly reporting their data on the basis of these standards and, where available, these data are used in the statistics in this annex. However, inconsistency of coverage, definitions and data-collection methods among reporting countries sometimes mar some of the national and international statistics that are perforce used in this *Survey* and other international publications. Another perennial problem is late, incomplete or non-reported data. Although adjustments and estimations are possible, and are made in selected cases, there is a need in some areas for reporting not only on an annual basis, but also quarterly or even more frequently. Considerable progress has been made by some developing countries and economies in transition in publishing annual and quarterly data on a timely and regular basis, but major lacunae have developed in other cases, particularly for economies in conflict.

One widespread source of inaccuracy arises from the use of out-of-date benchmark surveys and censuses or obsolete models and assumptions about behaviour and conditions. On the other hand, when statistical administrations seek to improve their estimates by using new sources of data and updated surveys, there can be discontinuities in the series. National income estimates are especially affected, sometimes being subject to revisions on the order of 10-30 per cent.

2 Washington, D.C., IMF, 1996.

3 Singapore and Taiwan Province of China are included among the net-creditor countries although they are not included in the International Monetary Fund (IMF) group of "net-creditor" developing countries because they are classified by IMF as advanced countries.

4 Commission of the European Communities, IMF, OECD, United Nations and World Bank, *System of National Accounts, 1993* (United Nations publication, Sales No. E.94.XVII.4).

5 IMF, *Balance of Payments Manual, 5th ed.* (Washington, D.C., IMF, 1993).

National accounts and related indicators mainly record market transactions conducted through monetary exchange. Barter, production by households, subsistence output and informal sector activities are not always recorded; together, the omitted items can constitute a large share of total activity and their omission can lead to an underestimation of national output by up to 40 per cent. As the degree of underestimation varies across countries, comparisons may give faulty results. In addition, as the non-market sector is absorbed over time into the mainstream of production through increasing monetization, output growth will be overstated (see "Data definitions and conventions" below for illustrations of such difficulties).

Weaknesses at the national level become major analytical handicaps when comparisons are made between countries or groupings of countries at a given time or over time. Missing, unreliable or incompatible country data necessitate estimation and substitution by international organizations if they are to retain consistent country composition of aggregated data over time. In particular, the absence of reliable GDP estimates for many developing countries and economies in transition requires the use of estimates in preparing country aggregations for many data series, as GDP weights often underlie such aggregations.

There are also problems with other types of statistics such as on unemployment, consumer price inflation, and the volume of exports and imports. Cross-country comparisons of unemployment must be made with caution, owing to differences in definition among countries. For this reason in particular, table A.7 employs the standardized definitions of unemployment rates which, in certain cases, differ substantially from national definitions.

Consumer price indices are among the oldest of the economic data series collected by Governments, but they are still surrounded by controversy, even in countries with the most advanced statistical systems. This is attributable particularly to the introduction of new goods and changes in the quality of goods and consumer behaviour that are often not captured because of, *inter alia*, infrequent consumer-spending surveys and revisions to the sample baskets of commodities.

There are no clear-cut solutions to many of the problems noted above. Even when there are, inadequate resources allocated to the improvement of statistical systems and reporting can perpetuate statistical shortcomings. In this light, it is advisable to approach some of the economic and social indicators presented in this *Survey* as approximations and estimations.

DATA DEFINITIONS AND CONVENTIONS

Aggregate data are either sums or weighted averages of individual country data. Unless otherwise indicated, multi-year averages of growth rates are expressed as compound annual rates of change. The convention followed is to identify the period of change in a multi-year growth rate and omit the base year; for example, the 10-year average growth rate of a variable in the 1980s would be identified as the average annual growth rate in 1981-1990. Year-to-year growth rates are expressed as annual percentage changes.

Historical data presented in the statistical annex may differ from those in previous editions because of updating and changes in the availability of data

for individual countries. In this *Survey,* the base year for GDP has been updated from 1993 to 1995 and all data adjusted accordingly.

Output

National practices are followed in defining real GDP for each country and these national data are aggregated to create regional output figures. The growth of output in each group of countries is calculated from the sum of GDP of individual countries measured at 1995 prices and exchange rates. Data for GDP in 1995 in national currencies were converted into dollars (with adjustments in selected cases[6]) and extended forward and backward in time using changes in real GDP for each country. This method supplies a reasonable set of aggregate growth rates for a period of about 15 years, centred on 1995.

Developed economies

Beginning with 1991, aggregate economic growth data for Germany include the former German Democratic Republic, allowing the computation of growth rates from official data beginning with 1992. The growth rate in 1991, as shown in table A.2, is a weighted average of official and estimated GDP growth rates in the two parts of Germany, with the weighting based on the level of GDP in 1991, as published by *Statistisches Bundesamt* (the Federal Statistical Office) of Germany.

Economies in transition

Starting with the *World Economic Survey, 1992*,[7] there was a switch to GDP from net material product as the measure of aggregate output of the economies in transition. In order to produce a time-series in real and nominal terms, adjustments were made, notably in the case of the former Soviet Union, to the published gross national product (GNP) data in local currency. In many instances, there were neither fully reliable national accounts data nor meaningful exchange rates for the 1980s, and this continued into the 1990s in several cases. A set of weights was estimated from fragmentary data and a series of approximate growth rates of GDP in constant prices was constructed for the Soviet Union for 1981-1990. Subsequently, new data became available and with the shift in base year from 1988 to 1993, and now to 1995, national estimates of GDP were introduced into the calculation of base-year GDP values and weights.

The extent of economic activity not captured by national statistics and its evolution over time have become a concern in some economies in transition. In addition, the proliferation of new modes of production, transactions and entities has rendered the previous institutional and methodological framework for statistics inadequate. A comprehensive reform of national statistical systems has thus been under way in many economies in transition. As a result, important revisions to several data series have been released and further revisions of measures of past and current performance are expected. In the meantime, the statistical information provided, especially for many of the successor States of the Soviet Union, as well as for other economies in transition, must be treated as tentative estimates subject to revision.[8]

6 When individual exchange rates seem unrealistic, alternative exchange rates are substituted. Averages of the exchange rates in relevant years might be used, or the exchange rate of a more normal year might be adjusted using relative inflation rates since that time.

7 United Nations publication, Sales No. E.92.II.C.1 and Corr.1 and 2.

8 See *World Economic and Social Survey, 1995* (United Nations publication, Sales No. E.95.II.C.1), statistical annex, section entitled "Data caveats and conventions".

Developing countries

Beginning with the *World Economic Survey, 1997*,[9] estimates of the growth of output in developing countries have been based on the data of 95 economies, accounting for 97-98 per cent of the 1995 GDP and population of all developing countries and territories. The sample countries account for more than 95 per cent of the GDP and population of each of the geographical regions into which the developing countries are divided, with the exception of the countries of sub-Saharan Africa included in the sample which account for at least 90 per cent of GDP and population.

The veracity of estimates of output and of other statistical data of developing countries is related to the stage of development of their statistical systems. In Africa in particular, there are wide divergences in the values of the economic aggregates provided by different national and international sources for many countries. In addition, data for countries in which there is civil strife or war often provide only rough orders of magnitude. Finally, in countries experiencing high rates of inflation and disequilibrium exchange rates, substantial distortions can invade national accounts data.

Alternative aggregation methodologies for calculating world output

The *World Economic and Social Survey* utilizes a weighting scheme derived from exchange-rate conversions of national data in order to aggregate rates of growth of output of individual countries into regional and global totals, as noted above. This is similar to the approach followed in other international reports, such as those of the World Bank. However, the aggregations used by IMF in its *World Economic Outlook* and by OECD in its *Economic Outlook* rely on country weights derived from national GDP in "international dollars", as converted from local currency using purchasing power parities (PPPs). The question of which approach to use is controversial.[10]

The reason advanced for using PPP weights is that, when aggregating production in two countries, a common set of prices should be used to value the same activities in both countries. This is frequently not the case when market exchange rates are used to convert local currency values of GDP. The PPP approach revalues gross expenditure in different countries using a single set of prices, in most cases some average of the prices in countries for which the comparison is being effected. By construction, these revalued GDP magnitudes are then related to a numeraire country, usually in the United States, by assuming that GDP at PPP values for that country is identical with GDP at market exchange rate. The PPP conversion factor is then, in principle, the number of units of national currency needed to buy the goods and services that can be bought with one unit of the currency of the numeraire country.[11]

In principle as well as in practice, however, PPPs are difficult to calculate because goods and services are not always directly comparable across countries, making direct comparisons of their prices correspondingly difficult. It is particularly difficult to measure the output and prices of many services, such as health care and education.

One problem in employing PPP estimates for calculating the relative sizes of economies is that even the most recently completed set of PPP prices covers only a comparatively small group of countries. Initially, in 1985, there were PPP data for only 64 countries. Subsequent work under the auspices of the

[9] United Nations publication, Sales No. E.97.II.C.1 and corrigenda.

[10] See *World Economic and Social Survey, 1995* (United Nations publication, Sales No. E.95.II.C.1), statistical annex, section entitled "Alternative aggregation methodologies for GDP".

[11] Since a common set of international prices is used, the translation of purchasing power values relative to any numeraire country is defined, given the built-in transitivity property.

OUTPUT AND PER CAPITA OUTPUT IN THE BASE YEAR

	GDP (billions of dollars)		GDP per capita (dollars)	
	Exchange-rate basis 1995	PPP basis 1995	Exchange-rate basis 1995	PPP basis 1995
World	28 767	34 716	5 154	6 220
Developed economies	22 425	19 061	27 124	23 056
of which:				
United States	7 401	7 401	27 705	27 705
European Union	8 427	7 345	22 678	19 766
Japan	5 134	2 879	41 052	23 023
Economies in transition	785	2 327	1 911	5 661
Developing countries	5 557	13 328	1 279	3 068
By region:				
Latin America	1 689	3 037	3 593	6 461
Africa	463	1 321	671	1 914
Western Asia	735	1 253	3 363	5 730
Eastern and Southern Asia	2 669	7 717	900	2 603
China	700	3 237	584	2 700
By analytical grouping:				
Net-creditor countries	574	791	10 393	14 318
Net-debtor countries	49 83	12 537	1 162	2 924
Net fuel exporter countries	1 308	3 184	1 627	3 961
Net fuel importer countries	4 249	10 144	1 200	2 866
Memo items:				
Sub-Saharan Africa	128	452	315	1 114
Least developed countries	136	514	244	924

Source: UN/DESA.

International Comparison Project (ICP) has increased this number, but it remains far lower than the number of countries for which this *Survey* needs data.

However, certain regularities have been observed, on the one hand, between GDP and its major expenditure components when measured in market prices and, on the other, between GDP and its components measured in "international" prices as derived in the ICP exercises. On that basis (and using other partial data on consumer prices), a technique was devised to approximate PPP levels of GDP and its major expenditure components for countries that had not participated in ICP. The results are known as the Penn World Tables.[12]

Neither the PPP approach nor the exchange-rate approach to weighting country GDP data can be applied in a theoretically pure or fully consistent way. The data requirements for a global ICP are enormous, although coverage has grown in each round. Similarly, since a system of weights based on exchange rates presumes that those rates are determined solely by trade in goods and ser-

12 See Robert Summers and Alan Heston, "The Penn World Table (Mark 5): an expanded set of international comparisons, 1950-1988", National Bureau of Economic Research (NBER) Working Paper No. R1562, May 1991.

vices and that domestic economies operate under competitive and liberal conditions, its application has been constrained by exchange controls and price distortions in many countries. Moreover, there are a large number of non-traded goods and services in each country to which the "law of one price" does not apply. However, the global trend towards liberalization may make possible a more consistent application over time of the exchange-rate method. Even so, the methods are conceptually different and thus yield different measures of world output growth.

Since the aggregation weights for all tables in this *Survey* were shifted to 1995, the comparison with computations at PPPs requires that PPP aggregations also be executed with appropriate weights for that year. PPPs for 1995 are not readily available. However, the purpose of the data given below is to permit comparison between aggregate data issued mainly by IMF and the aggregate data utilized in this *Survey*. IMF disclosed the share of nearly all countries, including the United States, in world GDP evaluated in PPPs for 1995 as used in its own aggregations. Inasmuch as the share of the United States in GDP at market exchange rates is known and, by construction, its GDP at PPP values and its GDP at market exchange rates are identical, the world total GDP at PPPs can be computed. The shares for the other countries are those disclosed by IMF.

The differences for the periods 1981-1990 and 1991-1999 are shown in table A.1. The estimates employ the same countries and the same data for the growth rates of GDP of the individual countries in the two computations. The columns differ only in the weights used which are those shown in the table entitled "Output and per capita output in the base year".

The table indicates that the world economy as a whole has grown faster when country GDPs are valued at PPP conversion factors, even though the growth rates for the main groupings of countries do not differ much when data are converted at PPP rather than at exchange rates. The reason for this is that the developing countries, in aggregate, have been growing more rapidly than the rest of the world in the 1990s and the share of GDP of these countries is larger under PPP measurements than under market exchange rates. The influence of China is particularly important, given its high growth rate for nearly two decades.

International trade

Trade values in table A.13 are based largely on customs data for merchandise trade converted into dollars using average annual exchange rates and are mainly drawn from IMF, *International Financial Statistics*. These data are supplemented by balance-of-payments data in certain cases. Estimates of the dollar values of trade include estimates by the regional commissions and the Development Policy Analysis Division.

The main source of data for table A.14 is the IMF Direction of Trade Statistics database, while tables A.15 and A.16 are drawn from the more detailed trade data in the United Nations External Trade Statistics Database (COMTRADE).

As of 1 January 1993, customs offices at the borders between States members of EU, which used to collect and check customs declarations on national exports

and imports, were abolished as the Single European Market went into effect. A new system of data collection for intra-EU trade, called INTRASTAT, was put in place. INTRASTAT relies on information collected directly from enterprises and is linked with the system of declarations of value-added tax (VAT) relating to intra-EU trade so as to allow for quality control of the data. There nevertheless remains a discontinuity owing to the change in methodology.

Estimates of trade values and volumes for the economies in transition are tentative for two reasons. First, there was a switch, mainly in 1991, from intraregional trade at arbitrarily set prices in transferable roubles to trade at world market prices in convertible currency. Second, many of the data-collection systems in the region are not yet up to world standards. These shortcomings mainly affect the reliability of calculations of changes in volumes for the CIS countries.

The unit values that are used to determine measures of the volume of exports and imports for groupings of developing countries are estimated in part from weighted averages of export prices of commodity groupings at a combination of three- and four-digit Standard International Trade Classification (SITC) levels, based on COMTRADE; the weights reflect the share of each commodity or commodity group in the value of the region's total exports or imports.

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I. GLOBAL OUTPUT AND MACROECONOMIC INDICATORS

Table A.1.
WORLD POPULATION, OUTPUT AND PER CAPITA GDP, 1980-1999

	Growth of GDP (annual percentage change)				Growth rate of population (annual percentage change)		Population (millions)		GDP per capita	
	Exchange-rate basis (1995 dollars)		Purchasing power parity (PPP) basis						Exchange-rate basis (1995 dollars)	
	1981-1990	1991-1999	1981-1990	1991-1999	1981-1990	1991-1999	1980	1999	1980	1999
World	2.9	2.4	3.0	2.9	1.7	1.4	4367	5 890	4 551	5 473
Developed economies	3.0	2.2	2.9	2.3	0.6	0.5	756	842	20 337	29 608
of which:										
United States	3.1	3.2	3.1	3.2	1.0	0.9	230	276	21 080	31 602
European Union[a]	2.3	1.7	2.4	1.8	0.3	0.3	355	375	17 634	24 570
Japan	4.0	1.3	4.0	1.3	0.6	0.2	117	126	27 646	42 488
Economies in transition[b]	1.8	-3.5	2.0	-4.1	0.7	0.1	378	411	2 610	1 985
Developing countries	2.3	4.4	3.4	5.1	2.1	1.7	3 233	4 637	1 087	1 401
by region:										
Latin America	1.1	3.0	1.3	2.9	2.0	1.7	354	500	3 675	3 766
Africa	2.0	2.1	1.9	2.0	2.9	2.7	455	765	787	689
Western Asia	-2.8	2.2	-1.5	2.5	3.4	2.5	137	240	6718	3 520
Eastern and Southern Asia	7.0	6.5	6.9	7.1	1.9	1.4	2 287	3 132	408	1 034
Region excluding China	6.6	5.2	5.9	4.9	2.2	1.7	1 306	1 335	587	1 205
of which:										
East Asia	7.0	5.3	6.3	4.9	1.9	1.6	414	576	1 314	2 956
South Asia	5.3	4.9	5.2	4.9	2.3	1.8	892	1 312	250	436
China	9.1	10.3	9.1	10.3	1.5	1.0	981	1 244	170	775
by analytical grouping:										
Net-creditor countries	1.6	4.4	0.9	3.9	3.2	2.0	37	60	10 624	11 181
Net-debtor countries	2.4	4.4	3.6	5.2	2.1	1.7	3 196	4 577	978	1 272
Net fuel exporters	-1.1	2.4	0.7	2.8	2.6	2.1	559	873	2 373	1 692
Net fuel importers	4.0	5.0	4.6	5.8	2.0	1.6	2 674	3 765	819	1 333
Memo items:										
Sub-Saharan Africa	1.8	2.4	1.2	2.0	3.0	2.9	262	452	387	330
Least developed countries	2.2	2.8	1.9	2.7	2.6	2.5	379	616	263	257

Source: UN/DESA.

[a] Including the eastern *Länder* (States) of Germany from 1991.
[b] Including the former German Democratic Republic until 1990.

Table A.2.
DEVELOPED ECONOMIES: RATES OF GROWTH OF REAL GDP, 1991-2000

Annual percentage change[a]	1991-1999	1991	1992	1993	1994	1995	1996	1997	1998	1999[b]	2000[c]
All developed economies	2.2	1.1	1.8	0.8	2.7	2.3	3.2	3.0	2.1	2.6	3
United States	3.2	-0.2	3.3	2.4	4.0	2.7	3.7	4.5	4.3	4.2	4
Canada	2.4	-1.8	0.8	2.3	4.7	2.8	1.7	3.9	3.1	4.2	3½
Japan	1.3	3.8	1.0	0.3	0.6	1.5	5.1	1.6	-2.5	0.3	1
Australia	3.4	-1.3	2.7	4.0	5.3	4.1	3.7	2.8	4.8	4.4	3
New Zealand	2.1	-2.3	0.6	5.1	5.5	3.3	2.7	2.0	-0.3	2.5	4¼
EU-15	1.8	0.9	1.2	-0.4	2.7	2.3	1.6	2.4	2.7	2.3	3¼
EU-11	1.7	1.3	1.5	-0.8	2.4	2.2	1.4	2.2	2.7	2.3	3¼
Austria	2.1	3.4	1.3	0.5	2.4	1.7	2.0	2.5	3.3	2.1	2½
Belgium	1.9	2.0	1.6	-1.5	3.0	2.5	1.0	3.5	2.7	2.4	3¾
Finland	1.7	-6.3	-3.3	-1.1	4.0	3.8	4.0	6.3	5.0	3.5	3¼
France	1.6	1.0	1.5	-0.9	2.1	1.8	1.1	1.9	3.1	2.9	3½
Germany	1.4	1.2	2.2	-1.1	2.3	1.7	0.8	1.5	2.2	1.5	2¾
Ireland	6.5	1.9	3.3	2.6	5.8	9.5	7.7	10.7	8.9	8.3	8½
Italy	1.3	1.4	0.8	-0.9	2.2	2.9	0.9	1.5	1.3	1.4	2½
Luxembourg	4.2	3.1	1.8	8.7	4.2	3.8	3.0	4.8	4.7	4.2	4½
Netherlands	2.7	2.2	2.0	0.6	3.2	2.3	3.1	3.7	3.7	3.6	4¾
Portugal	2.3	2.3	1.9	-1.4	2.4	2.9	3.2	3.5	3.5	2.9	2¾
Spain	2.2	2.3	0.7	-1.2	2.3	2.7	2.4	3.5	3.8	3.7	3½
Other EU	2.0	-0.9	0.0	1.3	4.2	2.9	2.4	3.2	2.4	2.4	3
Denmark	2.6	1.4	1.3	0.8	5.8	3.0	3.3	3.1	2.9	1.7	1½
Greece	2.0	3.5	0.4	-0.9	1.5	2.0	1.8	3.2	3.5	3.5	3¾
Sweden	1.3	-1.7	-1.4	-2.2	3.3	3.9	1.3	1.8	2.9	3.7	3
United Kingdom	2.0	-1.5	0.1	2.3	4.4	2.8	2.6	3.5	2.2	2.1	3¼
Other Europe											
Iceland	2.4	1.1	-3.3	1.0	3.6	1.0	5.7	5.3	5.1	2.3	2¼
Malta	4.7	6.3	4.7	4.5	4.0	9.0	4.2	1.6	2.0	1.8	1¾
Norway	3.4	3.1	3.3	2.7	5.5	3.8	5.5	3.4	2.0	1.0	3½
Switzerland	0.6	-0.8	-0.1	-0.5	0.5	0.5	0.3	1.7	2.1	1.7	1¾
Memo item:											
Major industrialized countries	2.2	1.2	2.0	0.9	2.7	2.2	3.2	2.9	1.9	2.5	3

Source: UN/DESA, based on IMF, *International Financial Statistics*.

[a] Data for country groups are weighted averages, where weights for each year are the previous year's GDP valued at 1995 prices and exchange rates.
[b] Partly estimated.
[c] Forecast, partly based on Project LINK.

Table A.3.
ECONOMIES IN TRANSITION: RATES OF GROWTH OF REAL GDP, 1993-2000

Annual percentage change[a]	1993	1994	1995	1996	1997	1998	1999[b]	2000[c]
Economies in transition	-6.7	-7.1	-0.6	0.0	2.3	-0.6	2.1	3¾
Central and Eastern Europe and Baltic States	-1.9	3.6	5.5	4.1	3.7	2.6	1.3	4
Central and Eastern Europe	-1.2	4.0	5.7	4.1	3.5	2.5	1.4	4
Albania	9.7	8.3	13.3	9.0	-7.0	8.0	8.0	8
Bulgaria	-1.4	1.8	2.8	-10.2	-7.0	3.5	2.5	3
Croatia	-8.0	5.9	6.8	5.9	6.8	2.5	-0.7	2
Czech Republic	0.0	2.2	6.0	3.8	0.3	-2.3	-0.2	1¾
Hungary	-0.6	3.1	1.4	1.4	4.6	4.9	4.5	5
Poland	3.8	5.1	7.1	6.0	6.9	4.8	4.1	5¼
Romania	1.6	3.9	7.1	4.0	-6.1	-5.4	-3.2	1
Slovakia	-3.6	4.8	7.0	6.5	6.5	4.4	1.8	2
Slovenia	2.9	5.3	4.2	3.5	4.5	3.9	4.9	4
The former Yugoslav Republic of Macedonia	-9.0	-1.9	-1.2	0.7	1.5	2.9	2.7	3
Federal Republic of Yugoslavia	-30.8	2.7	6.0	5.9	7.4	2.6	-19.3	6
Baltic States	-14.1	-4.7	2.2	4.1	8.5	4.3	-2.0	3¾
Estonia	-9.0	-2.0	4.3	4.0	10.6	4.0	-1.1	5
Latvia	-14.9	0.6	-0.8	3.3	8.6	3.6	0.1	4
Lithuania	-16.2	-9.8	3.3	4.7	7.3	5.1	-4.1	2¾
Commonwealth of Independent States	-9.4	-13.7	-5.1	-3.4	1.1	-3.4	2.9	3¾
Armenia	-14.8	5.4	6.9	5.8	3.3	7.2	4.0	5½
Azerbaijan	-23.1	-19.7	-11.8	1.3	5.8	10.0	7.4	7½
Belarus	-7.6	-12.6	-10.4	2.8	11.4	8.4	3.0	1
Georgia	-25.4	-11.4	2.4	10.5	11.3	2.9	3.0	6
Kazakhstan	-9.2	-12.6	-8.2	0.5	1.7	-1.9	1.7	3½
Kyrgyzstan	-16.0	-20.0	-5.4	-7.1	9.9	2.1	2.2	4
Republic of Moldova	-1.2	-31.2	-3.0	-8.0	1.6	-8.6	-5.0	1
Russian Federation	-8.7	-12.7	-4.1	-3.3	0.9	-4.5	3.2	4
Tajikistan	-11.0	-18.9	-12.5	-4.4	1.7	5.3	3.7	4
Turkmenistan	-10.0	-18.8	-8.2	-8.0	-11.4	5.0	16.0	15
Ukraine	-14.2	-23.0	-12.2	-10.0	-3.0	-1.7	-0.4	2
Uzbekistan	-2.3	-4.2	-0.9	1.6	5.2	4.4	4.1	2½

Sources: UN/DESA and ECE.

[a] Country group aggregates are averages weighted by GDP in 1995 dollars.
[b] Partly estimated.
[c] Forecast, based in part on Project LINK.

Table A.4.
DEVELOPING COUNTRIES: RATES OF GROWTH OF REAL GDP, 1991-2000

Annual percentage change

	1991-1999	1991	1992	1993	1994	1995	1996	1997	1998	1999[a]	2000[b]
Developing countries[c]	4.4	2.9	4.8	5.2	5.6	5.0	5.7	5.4	1.5	3.4	5¼
of which:											
Latin America and the Caribbean	3.0	3.1	2.5	3.6	5.3	1.4	3.7	5.1	1.9	0.3	3¾
Net fuel exporter	2.8	4.7	4.1	2.2	3.6	-2.4	3.7	5.7	3.1	0.4	4
Net fuel importer	3.1	2.4	1.8	4.2	6.1	2.9	3.8	4.9	1.5	0.2	3¾
Africa	2.1	1.1	-0.1	0.1	2.3	2.5	4.6	3.0	2.7	2.8	4¼
Net fuel exporter	2.2	1.9	1.1	-0.9	0.5	3.4	3.6	3.5	2.8	4.1	5
Net fuel importer	2.1	0.6	-0.8	0.7	3.4	2.0	5.2	2.7	2.6	2.1	3¾
Western Asia	2.2	-6.4	5.4	4.3	-0.8	4.0	4.6	5.5	3.7	0.5	4
Net fuel exporter	1.6	-11.1	5.4	3.1	-0.5	1.7	3.9	5.9	4.4	2.5	4
Net fuel importer	3.4	2.1	5.3	6.2	-1.3	7.5	5.8	4.9	2.6	-2.4	3¾
Eastern and Southern Asia	6.5	6.8	7.4	7.6	8.4	8.1	7.3	6.0	0.5	6.2	6½
Region excluding China	5.2	6.1	5.5	5.9	7.0	7.3	6.5	5.0	-2.3	5.8	6¼
of which:											
East Asia	5.3	7.2	6.0	6.5	7.6	7.6	6.7	5.1	-4.6	5.8	6¼
South Asia	4.9	2.9	4.2	3.9	5.2	6.3	6.0	4.8	5.3	5.6	6
Memo items:											
Sub-Saharan Africa (excluding Nigeria and South Africa)	2.4	0.6	0.2	-1.1	2.1	3.9	5.3	4.1	3.2	3.4	4¼
Least developed countries	2.8	0.3	1.4	0.8	2.0	4.8	4.4	4.5	3.7	3.4	4¾
Major developing economies											
Argentina	4.7	10.6	9.6	5.7	5.8	-2.8	5.5	8.1	3.9	-3.0	2¾
Brazil	2.3	0.1	-1.1	4.1	6.2	4.2	2.9	3.5	0.1	1.0	4
Chile	6.1	7.1	10.5	6.0	5.4	9.9	7.0	7.6	3.4	-1.1	6
China	10.3	9.2	14.2	13.5	12.6	10.5	9.6	8.8	7.8	7.1	7
Colombia	2.6	1.6	4.0	5.1	6.3	5.4	2.1	2.8	0.6	-4.5	3
Egypt	3.6	2.3	2.5	2.0	2.3	3.2	4.0	5.9	5.7	5.0	5½
Hong Kong SAR[d]	3.8	5.1	6.3	6.1	5.3	4.7	4.8	5.2	-5.1	2.3	4½
India	5.0	2.0	4.0	3.9	5.4	6.7	6.4	5.3	5.6	6.1	6½
Indonesia	3.7	7.0	6.5	6.5	7.5	8.1	8.0	4.7	-13.1	0.2	4¼
Iran (Islamic Republic of)	3.4	6.0	6.0	2.6	1.8	4.2	5.0	2.5	1.8	1.2	2¼
Israel	4.5	6.2	6.6	3.4	6.6	7.1	4.5	2.1	2.2	2.2	4
Korea, Republic of	6.0	9.1	5.1	5.8	8.6	8.9	7.1	5.5	-5.8	10.7	8¼
Malaysia	6.2	8.6	7.8	8.3	9.2	9.5	8.2	7.7	-7.5	5.1	7¼
Mexico	3.2	4.3	3.7	1.9	4.6	-6.2	5.5	6.8	4.8	3.7	4¾
Nigeria	2.8	4.8	3.0	2.3	1.3	2.2	3.3	3.1	1.9	3.4	4
Pakistan	4.2	6.7	5.1	3.1	4.2	4.9	5.2	1.3	3.7	3.8	4½
Peru	4.5	2.8	-1.4	6.4	13.1	7.3	2.4	6.9	0.3	3.8	4½
Philippines	2.7	0.0	0.0	2.1	4.4	4.8	5.5	5.2	-0.5	3.2	4
Saudi Arabia	1.9	6.0	3.0	1.6	-2.7	-0.2	4.0	3.0	0.8	1.6	2
Singapore	6.9	6.7	6.0	9.9	10.1	8.9	7.0	7.8	0.4	5.4	6¾
South Africa	1.3	-1.0	-2.2	1.3	2.7	3.4	3.2	2.5	0.6	1.3	3½
Taiwan Province of China	6.2	7.6	6.8	6.3	6.5	6.1	5.6	6.8	4.6	5.7	6½
Thailand	4.4	8.5	7.8	8.3	8.7	8.6	6.7	-1.3	-10.2	4.2	4¾
Turkey	2.9	0.8	5.0	8.1	-6.1	8.0	7.0	6.8	3.0	-5.5	4
Venezuela	1.3	9.7	6.1	0.7	-3.0	3.1	-1.3	5.1	-0.7	-7.2	2¼

Source: United Nations.

[a] Preliminary estimates.
[b] Forecast, based in part on Project LINK.
[c] Covering countries that account for 98 per cent of the population of all developing countries.
[d] Special Administrative Region of China.

Table A.5.
DEVELOPED ECONOMIES: INVESTMENT, SAVING AND NET TRANSFERS, 1980-1998

Percentage of GDP

		Gross domestic investment	Gross domestic saving	Net financial transfer
Total[a]	1980	23.6	23.7	-0.2
	1985	21.5	21.8	-0.3
	1990	22.3	22.3	0.0
	1995	21.3	21.4	-0.1
	1996	21.2	21.8	-0.7
	1997	19.8	20.6	-0.8
	1998	21.1	21.5	-0.4
Major industrialized countries[a]	1980	23.3	22.6	0.7
	1985	21.5	20.8	0.6
	1990	22.0	22.0	0.1
	1995	21.3	21.0	0.3
	1996	21.2	21.5	-0.3
	1997	21.1	21.5	-0.4
	1998	19.5	19.6	-0.2
European Union (15)	1980	22.9	22.0	0.9
	1985	19.5	20.9	-1.4
	1990	21.8	22.1	-0.4
	1995	19.3	21.1	-1.9
	1996	18.9	21.2	-2.2
	1997	18.9	21.2	-2.2
	1998	18.9	21.2	-2.2
Germany[b]	1980	23.4	22.9	0.5
	1985	19.6	23.1	-3.5
	1990	21.4	27.3	-5.9
	1995	22.7	17.7	5.0
	1996	21.6	22.7	-1.1
	1997	21.6	23.1	-1.5
	1998	21.8	23.5	-1.7
Japan	1980	32.2	31.3	0.9
	1985	28.2	31.5	-3.4
	1990	32.3	33.0	-0.7
	1995	28.6	30.1	-1.5
	1996	30.0	30.5	-0.5
	1997	28.7	29.9	-1.2
	1998	26.5	28.5	-2.0
United States	1980	20.0	19.4	0.6
	1985	20.1	17.2	3.0
	1990	16.9	15.5	1.4
	1995	17.3	15.9	1.4
	1996	17.7	16.3	1.4
	1997	18.5	17.1	1.4
	1998	16.1	14.3	1.8

Sources: OECD, *National Accounts;* and national information supplied to the United Nations Statistics Division.

[a] National data converted to dollars for aggregation at annual average exchange rates.
[b] Prior to 1991, data referring to Western Germany only.

Table A.6.
DEVELOPING ECONOMIES: INVESTMENT, SAVING AND NET TRANSFERS, 1980-1998

Percentage of GDP

	Gross domestic investment				Gross domestic savings				Net transfer of resources			
	1980	1985	1990	1998	1980	1985	1990	1998	1980	1985	1990	1998
All developing countries	25.6	23.5	25.1	25.0	28.4	24.3	25.9	25.5	-2.8	-0.8	-0.8	-0.5
by region:												
Africa	23.6	21.4	21.5	21.7	28.0	20.6	18.1	16.4	-4.4	0.8	3.4	5.3
Latin America	24.8	19.3	19.7	21.9	23.5	23.9	21.7	19.0	1.3	-4.6	-2.0	2.9
Eastern and Southern Asia (excluding China)	25.8	24.1	29.2	23.6	23.5	25.6	29.8	28.6	2.3	-1.5	-0.6	-5.0
East Asia	29.6	25.1	32.1	24.0	29.3	30.9	34.7	32.7	0.2	-5.8	-2.7	-8.8
South Asia	20.5	22.7	23.5	22.8	15.4	18.0	19.9	19.5	5.1	4.7	3.7	3.3
Western Asia	23.8	20.8	23.4	21.0	40.6	19.2	24.2	18.8	-16.9	1.6	-0.8	2.2
by analytical grouping:												
Net-creditor countries	24.2	23.2	24.7	24.9	56.7	31.4	33.0	28.7	-32.5	-8.2	-8.3	-3.8
Net-debtor countries	25.8	23.5	25.2	25.0	24.0	23.5	25.1	25.1	1.7	0.0	0.1	-0.1
Net fuel exporters	25.3	22.3	24.1	22.0	37.4	24.1	25.9	20.3	-12.1	-1.8	-1.8	1.7
Net fuel importers	24.1	20.8	24.1	22.5	20.0	22.2	24.1	22.8	4.1	-1.3	0.0	-0.3
Four exporters of manufacturers	34.2	26.3	31.6	24.7	28.9	36.9	37.0	32.8	5.3	-10.6	-5.4	-8.1
Memo items:												
Sub-Saharan Africa	18.1	16.2	16.3	18.1	13.1	13.9	12.5	13.5	5.0	2.3	3.8	4.6
Least developed countries	18.9	15.4	16.5	18.9	5.9	4.6	7.0	9.6	13.1	10.8	9.4	9.2
Selected developing countries												
Argentina	25.3	17.6	14.0	19.9	23.8	23.1	19.7	17.4	1.4	-5.5	-5.7	2.5
Brazil	23.3	19.2	20.2	21.3	21.1	24.4	21.4	18.6	2.3	-5.2	-1.2	2.7
China	35.2	37.8	34.7	38.3	34.8	33.5	37.9	42.6	0.4	4.3	-3.2	-4.3
Egypt	27.5	26.7	28.8	22.2	15.2	14.5	16.1	15.8	12.4	12.1	12.7	6.5
India	20.4	23.6	24.6	23.6	17.1	20.7	22.0	20.9	3.3	2.9	2.6	2.7
Indonesia	24.1	26.1	30.8	14.0	38.0	28.6	33.2	24.1	-14.0	-2.5	-2.4	-10.1
Korea, Republic of	31.7	29.7	37.7	20.9	23.6	30.3	36.5	33.8	8.1	-0.5	1.2	-12.9
Mexico	27.2	21.2	23.1	24.4	24.9	26.3	22.0	22.4	2.3	-5.1	1.1	2.0
Nigeria	21.3	9.0	14.7	20.0	31.4	12.6	29.4	11.8	-10.2	-3.7	-14.6	8.2
Peru	29.0	18.4	21.1	24.3	32.0	24.9	21.6	19.5	-3.0	-6.5	-0.4	4.7
South Africa	23.4	15.0	11.8	15.6	31.4	23.8	17.6	16.9	-8.0	-8.7	-5.8	-1.2
Thailand	29.1	28.2	41.4	25.3	22.9	25.5	33.8	41.8	6.3	2.7	7.5	-16.5
Turkey	18.2	16.5	24.3	24.6	11.4	13.4	20.1	21.1	6.8	3.1	4.3	3.5

Source: United Nations, based on World Bank, *2000 World Development Indicators* (CD-ROM), and United Nations Secretariat estimates.

Table A.7.
DEVELOPED ECONOMIES,[a] CENTRAL AND EASTERN EUROPE AND BALTIC STATES: UNEMPLOYMENT RATES, 1991-2000

Percentage of total labour force

	1991	1992	1993	1994	1995	1996	1997	1998	1999[b]	2000[c]
All developed economies	6.6	7.3	8.0	7.9	7.5	7.6	7.3	6.9	6.6	6½
United States	6.8	7.5	6.9	6.1	5.6	5.4	4.9	4.5	4.2	4¼
Canada	10.4	11.3	11.2	10.4	9.5	9.7	9.1	8.3	7.6	7½
Japan	2.1	2.2	2.5	2.9	3.1	3.4	3.4	4.1	4.7	4¾
Australia	9.6	10.8	10.9	9.7	8.5	8.5	8.5	8.0	7.2	6¾
New Zealand	10.3	10.3	9.5	8.2	6.3	6.1	6.7	7.4	6.8	6¼
EU-15	7.9	8.7	10.8	11.1	10.7	10.9	10.6	10.0	9.3	8¾
EU-11	7.9	8.5	10.9	11.7	11.4	11.6	11.6	10.9	10.1	9½
Austria	3.4	3.5	4.0	3.8	3.9	4.3	4.4	4.5	3.7	6
Belgium	6.6	7.3	8.9	10.0	9.9	9.7	9.4	9.5	9.0	8¾
Finland	6.7	11.6	16.4	16.7	15.3	14.6	12.6	11.4	10.2	9¼
France	9.5	10.4	11.7	12.3	11.7	12.4	12.3	11.8	11.3	10½
Germany[d]	4.2	4.5	7.9	8.4	8.2	8.9	9.9	9.4	9.1	8¾
Ireland	14.8	15.4	15.6	14.3	12.3	11.6	9.9	7.6	5.8	5
Italy	8.6	8.8	10.3	11.2	11.6	11.7	11.7	11.9	11.4	11
Luxembourg	1.7	2.1	2.7	3.2	2.9	3.0	2.7	2.7	2.3	3
Netherlands	5.8	5.6	6.6	7.1	6.9	6.3	5.2	4.0	3.3	3¼
Portugal	4.0	4.2	5.7	7.0	7.3	7.3	6.8	5.2	4.5	4½
Spain	16.4	18.4	22.7	24.1	22.9	22.2	20.8	18.8	15.9	14
Other EU	8.1	9.3	10.2	9.5	8.7	8.5	7.6	7.0	6.6	6½
Denmark	8.5	9.2	10.1	8.2	7.2	6.8	5.6	5.2	5.2	5¼
Greece[e]	7.7	8.7	9.7	9.6	10.0	10.3	10.4	11.2	10.2	10
Sweden	3.1	5.6	9.1	9.4	8.8	9.6	9.9	8.3	7.2	6
United Kingdom	8.9	10.0	10.5	9.6	8.7	8.2	7.0	6.3	6.1	6
Other Europe	3.2	4.1	4.7	4.4	4.1	4.3	4.2	3.4	3.1	3
Iceland	1.5	3.0	4.4	4.8	5.0	4.3	3.7	3.0	3.3	2¾
Malta[e]	3.6	4.0	4.5	4.0	3.6	4.4	5.0	5.1	5.4	5¼
Norway	5.6	6.0	6.1	5.5	5.0	4.9	4.1	3.3	3.2	3¾
Switzerland	2.0	3.1	4.0	3.8	3.5	3.9	4.2	3.5	3.0	2¾
Memo item:										
Major industrialized countries	6.2	6.8	7.2	7.1	6.7	6.8	6.6	6.4	6.2	6

Table A.7 (continued)

	1991	1992	1993	1994	1995	1996	1997	1998	1999[b]	2000[c]
Central and Eastern Europe[f]										
Albania			22.0	18.0	12.9	12.3	14.9	17.6	18.0	17½
Bulgaria			16.4	12.8	11.1	12.5	13.7	12.2	17.0	15
Croatia			16.6	17.3	17.6	15.9	17.6	18.6	20.8	18
Czech Republic			3.5	3.2	2.9	3.5	5.2	7.5	9.4	9¾
Hungary			12.1	10.9	10.4	10.5	10.4	9.1	9.6	9¼
Poland			16.4	16.0	14.9	13.2	10.3	10.4	12.8	12¾
Romania			10.4	10.9	9.5	6.6	8.8	10.3	11.3	12½
Slovakia			14.4	14.8	13.1	12.8	12.5	15.6	18.2	19¾
Slovenia			15.5	14.2	14.5	14.4	14.8	14.6	12.8	11
The former Yugoslav Republic of Macedonia			30.3	33.2	37.2	39.8	41.7	43.5	46.0	40
Yugoslavia			24.0	23.9	24.7	26.1	25.6	27.2	27.4	25
Baltic States[f]										
Estonia			5.0	5.1	5.0	5.6	4.6	5.1	6.6	6
Latvia			5.8	6.5	6.6	7.2	6.7	9.2	9.1	8½
Lithuania			3.4	4.5	7.3	6.2	6.7	6.9	10.0	8½

Sources: UN/DESA, based on data of OECD; national statistics and direct communications from national statistical offices to ECE secretariat.

[a] Unemployment data are standardized by OECD for comparability among countries and over time, in conformity with the definitions of the International Labour Office (see OECD, *Standardized Unemployment Rates: Sources and Methods* (Paris, 1985)); national definitions and estimates are used for other countries.
[b] Partly estimated.
[c] Forecast.
[d] Prior to January 1993, data do not include new *Länder* (States).
[e] Not standardized.
[f] Because of the comparability problem, figures are not given for the Commonwealth of Independent States.

Table A.8.
DEVELOPED ECONOMIES: CONSUMER PRICE INFLATION, 1991-2000[a]

Annual percentage change

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000[b]
Developed economies	4.2	3.1	2.7	2.2	2.1	1.9	2.0	1.3	1.2	1½
United States	4.2	3.0	3.0	2.6	2.8	2.9	2.3	1.6	2.2	2½
Canada	5.6	1.5	1.8	0.2	2.2	1.6	1.6	1.0	1.7	1¼
Japan	3.3	1.7	1.3	0.7	-0.1	0.1	1.7	0.6	-0.3	-½
Australia	3.2	1.0	1.8	1.9	4.6	2.6	0.3	0.9	1.5	2¼
New Zealand	2.6	1.0	1.4	1.7	3.8	2.6	0.9	1.3	1.4	2¼
EU-15	4.7	4.3	3.5	2.9	2.8	2.3	2.0	1.5	1.2	1¾
EU-11	4.2	4.3	3.7	2.9	2.6	2.2	1.7	1.2	1.1	1½
Austria	3.3	4.0	3.6	3.0	2.3	1.8	1.3	0.9	0.6	1¼
Belgium	3.2	2.4	2.8	2.4	1.5	2.1	1.6	1.0	1.1	1½
Finland	4.1	2.6	2.1	1.1	1.0	0.6	1.2	1.4	1.2	1¾
France	3.2	2.4	2.1	1.7	1.8	2.0	1.2	0.7	0.5	1
Germany	3.6	5.1	4.4	2.8	1.7	1.4	1.9	0.9	0.6	1¾
Ireland	3.2	3.1	1.4	2.3	2.5	1.7	1.4	2.4	1.6	2½
Italy	6.3	5.1	4.5	4.0	5.2	4.0	2.0	2.0	1.7	2
Luxembourg	3.1	3.2	3.6	2.2	1.9	1.4	1.4	1.0	1.0	1½
Netherlands	3.1	3.2	2.6	2.8	1.9	2.0	2.2	2.0	2.2	2¼
Portugal	11.4	8.9	6.8	4.9	4.1	3.1	2.2	2.8	2.3	2½
Spain	5.9	5.9	4.6	4.7	4.7	3.6	2.0	1.8	2.3	2½
Other EU	6.9	4.3	2.9	3.0	3.5	2.5	2.9	2.8	1.6	2½
Denmark	2.4	2.1	1.3	2.0	2.1	2.1	2.2	1.8	2.5	2¼
Greece	19.5	15.9	14.4	10.9	8.9	8.2	5.5	4.8	2.6	2
Sweden	9.0	2.8	4.6	2.6	2.5	0.0	0.8	-0.1	0.5	1¼
United Kingdom	5.9	3.7	1.6	2.5	3.4	2.4	3.1	3.4	1.6	2¾
Other Europe										
Iceland	6.8	4.0	4.1	1.6	1.7	2.3	1.7	1.7	3.2	2
Malta	2.5	1.6	4.1	4.1	4.0	2.5	3.1	2.4	2.1	2½
Norway	3.4	2.3	2.3	1.4	2.5	1.3	2.6	2.3	2.3	2
Switzerland	5.8	4.1	3.3	0.8	1.8	0.8	0.5	0.1	0.8	¼
Memo item:										
Major industrialized countries	4.1	3.0	2.6	2.0	2.0	1.9	2.0	1.3	1.1	1½

Source: UN/DESA, based on data of IMF, *International Financial Statistics.*

[a] Data for country groups are weighted averages, where weights for each year are 1995 GDP in United States dollars.
[b] Forecasts, partly based on Project LINK.

Table A.9.
ECONOMIES IN TRANSITION: CONSUMER PRICE INFLATION, 1993-2000

Annual percentage change

	1993	1994	1995	1996	1997	1998	1999[a]	2000[b]
Economies in transition[c]	821.8	381.5	144.5	41.5	38.8	22.1	51.1	20
Central and Eastern Europe and Baltic States[c]	149.1	44.5	25.7	25.2	67.7	16.7	12.6	10¾
Central and Eastern Europe[c]	145.4	44.1	25.4	25.4	70.2	17.2	13.1	11
Albania	85.0	22.6	7.8	12.7	33.2	20.6	-2.0	3
Bulgaria	72.8	96.0	62.1	123.0	1 082.2	22.3	0.4	6
Croatia[d]	1 516.6	97.5	2.0	3.5	3.6	5.7	4.2	6
Czech Republic	20.8	10.0	9.1	8.8	8.5	10.6	2.1	3½
Hungary	22.4	18.8	28.3	23.5	18.3	14.3	9.5	9
Poland	35.3	32.2	27.9	19.9	14.9	11.8	7.3	8¾
Romania	256.1	136.1	32.3	38.8	154.8	59.1	54.0	40
Slovakia	23.0	13.4	9.9	5.8	6.1	6.7	10.7	14
Slovenia[d]	31.9	21.5	13.5	9.9	8.4	8.0	6.8	5
The former Yugoslav Republic of Macedonia[d]	338.6	126.4	16.2	2.0	1.8	-1.0	1.0	6
Yugoslavia	..[e]	..[e]	71.8	90.5	23.2	30.4	50.0	50
Baltics States	232.2	54.2	32.2	22.0	9.3	5.7	2.2	3½
Estonia	89.0	47.7	29.0	23.1	11.2	8.2	3.3	4½
Latvia	109.1	35.8	25.1	17.6	8.4	4.7	3.2	3½
Lithuania	410.4	72.1	39.5	24.7	8.8	5.1	0.8	3
Commonwealth of Independent States	1 293.4	617.7	231.4	53.4	17.7	26.0	79.2	26½
Armenia	3 731.8	5 273.4	176.7	18.7	14.0	8.7	0.7	2½
Azerbaijan	1 129.7	1 664.4	411.7	19.8	3.7	-0.8	-8.5	3
Belarus	1 188.0	2 200.0	709.0	53.0	64.0	73.2	293.8	150
Georgia	3 125.4	15 606.5	162.7	39.4	7.1	3.5	19.1	6
Kazakhstan	1 662.3	1 879.9	176.3	39.1	17.4	7.3	8.4	5
Kyrgyzstan	772.4	189.9	38.9	30.3	25.5	12.0	36.8	20
Republic of Moldova	788.5	329.6	30.2	23.5	11.8	7.7	39.3	35
Russian Federation	874.7	307.4	197.4	47.6	14.7	27.7	85.9	25
Tajikistan	2 194.9	350.4	610.0	418.2	88.0	43.2	27.6	25
Turkmenistan	3 102.4	1 748.3	1 005.2	992.4	83.7	16.8	23.5	25
Ukraine	4 734.9	891.2	376.4	80.2	15.9	10.6	22.7	20
Uzbekistan	534.2	1 568.3	304.6	54.0	70.9	29.0	29.1	25

Sources: ECE and UN/DESA.

a Partly estimated.
b Forecasts.
c Excluding Yugoslavia in 1993 and 1994.
d Retail prices.
e Annual rates of hyperinflation of over 1 trillion percentage points.

Table A.10.
DEVELOPING COUNTRIES: CONSUMER PRICE INFLATION, 1991-2000[a]

Annual percentage change

	1991	1992	1993	1994	1995	1996	1997	1998	1999[b]	2000[c]
Developing countries by region:	83.9	140.8	271.1	139.7	23.2	14.1	9.7	10.6	7.0	7¼
Africa[d]	17.7	19.8	17.3	19.7	19.6	13.2	7.5	6.6	6.9	6¾
Eastern and Southern Asia	7.9	7.0	8.1	11.6	9.6	6.7	4.6	8.7	2.7	3½
Region excluding China	9.5	7.2	5.7	7.1	6.9	6.2	5.3	12.1	4.2	4¼
of which:										
East Asia	8.4	6.1	5.4	6.2	5.9	5.3	4.6	13.3	3.5	3½
South Asia	13.0	10.9	6.8	10.1	10.3	9.0	7.5	8.3	6.3	7
Western Asia	27.3	27.5	25.9	39.6	37.4	31.2	29.4	28.5	25.1	22
Latin America and the Caribbean	241.3	423.9	839.3	408.5	40.8	20.1	11.3	8.2	7.5	8
Memo items:										
Sub-Saharan Africa (excluding the Democratic Republic of the Congo, Nigeria and South Africa)	22.1	25.9	23.9	32.9	22.5	20.6	11.5	9.0	10.7	9¾
Least developed countries[d]	26.5	26.2	23.0	25.4	21.4	20.0	12.4	15.1	14.3	12¼
Major developing economies										
Argentina	171.7	24.9	10.6	4.2	3.4	0.2	0.5	0.9	-1.2	½
Brazil	432.8	951.6	1 928.0	930.0	66.0	15.8	6.9	3.2	4.9	8½
China	3.5	6.3	14.6	24.2	16.9	8.3	2.8	-0.8	-1.4	1½
Hong Kong SAR[e]	11.6	9.3	8.5	8.7	9.1	6.3	5.8	2.8	-4.0	1
India	13.9	11.8	6.4	10.2	10.2	9.0	7.2	8.5	6.4	7¼
Indonesia	9.4	7.5	9.7	8.5	9.4	8.0	6.7	57.6	20.5	5½
Israel	19.0	11.9	10.9	12.3	10.0	11.3	9.0	5.4	5.2	3½
Korea, Republic of	9.3	6.2	4.8	6.2	4.5	4.9	4.4	8.6	0.1	3¼
Malaysia	4.4	4.8	3.5	3.7	5.3	3.5	3.3	5.3	3.0	3½
Mexico	22.7	15.5	9.8	7.0	35.0	34.4	20.6	15.9	16.6	10½
Saudi Arabia	4.9	-0.1	1.1	0.6	4.9	1.2	0.0	-0.4	1.5	3
South Africa	15.3	13.9	9.7	9.0	8.6	7.4	8.6	6.9	5.2	4
Taiwan Province of China	5.4	4.5	3.0	4.1	3.7	3.1	1.8	2.6	0.2	2
Thailand	5.7	4.1	3.4	5.0	5.8	5.8	5.6	8.1	1.2	4
Turkey	66.0	70.1	66.1	106.3	88.1	80.3	85.7	84.6	64.9	55

Source: UN/DESA, based on data of IMF, *International Financial Statistics.*

a Weights used are GDP in 1995 dollars.
b Preliminary estimates based on data for part of the year.
c Forecast, based in part on Project LINK.
d Excluding the Democratic Republic of the Congo.
e Special Administrative Region of China.

Table A.11.
MAJOR DEVELOPED ECONOMIES: FINANCIAL INDICATORS, 1991-1999

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Short-term interest rates[a] *(percentage)*									
Canada	7.4	6.8	3.8	5.5	5.7	3.0	4.3	5.1	4.8
France[b]	9.5	10.4	8.7	5.7	6.4	3.7	3.2	3.4	3.0
Germany	8.8	9.4	7.5	5.3	4.5	3.3	3.2	3.4	2.7
Italy	12.2	14.0	10.2	8.5	10.5	8.8	6.9	5.0	3.0
Japan	7.5	4.6	3.1	2.2	1.2	0.5	0.5	0.4	0.1
United Kingdom	11.8	9.4	5.5	4.8	6.0	5.9	6.6	7.1	5.1
United States	5.7	3.5	3.0	4.2	5.8	5.3	5.5	5.4	5.0
Long-term interest rates[c] *(percentage)*									
Canada	9.8	8.8	7.8	8.6	8.3	7.5	6.4	5.5	5.7
France[d]	9.0	8.6	6.9	7.4	7.6	6.4	5.6	4.7	4.7
Germany	8.6	8.0	6.3	6.7	6.5	5.6	5.1	4.4	4.3
Italy	13.2	13.3	11.3	10.6	12.2	9.4	6.9	4.9	4.7
Japan[e]	6.5	4.9	3.7	3.7	2.5	2.2	1.7	1.1	1.2
United Kingdom	9.9	9.1	7.9	8.0	8.3	8.1	7.1	5.4	4.7
United States	7.9	7.0	5.9	7.1	6.6	6.4	6.4	5.3	5.6
General government financial balances[f] *(percentage)*									
Canada	-7.2	-8.0	-7.6	-5.6	-4.3	-1.8	0.8	0.9	2.7
France	-2.2	-4.2	-6.0	-5.6	-5.6	-4.1	-3.0	-2.7	-1.8
Germany[g]	-2.9	-2.5	-3.2	-2.5	-3.2	-3.4	-2.6	-1.7	-1.2
Italy	-10.0	-9.5	-9.4	-9.1	-7.6	-6.5	-2.8	-2.7	-1.8
Japan[h]	2.9	1.5	-1.6	-2.3	-3.6	-4.2	-3.4	-6.0	-8.1
United Kingdom	-2.8	-6.5	-8.0	-6.8	-5.8	-4.4	-2.0	0.2	1.2
United States	-5.0	-5.9	-5.0	-3.6	-3.1	-2.2	-0.9	0.4	1.2

Sources: United Nations, based on IMF, *International Financial Statistics*; and OECD, *Economic Outlook*.

a Money market rates
b From January 1999 onward, representing the three-month Euro Interbank Offered Rate (Euribor), which is an interbank deposit bid rate.
c Yield on long-term government bonds.
d From January 1999 onward, this is a Euro area yield for 10-year government bonds calculated on the basis of harmonized national government bond yields weighted by GDP.
e Data for 1999 is a nine-month average.
f Surplus (+) or deficit (-) as a percentage of nominal GNP or GDP; some of 1999 are J.P. Morgan estimates.
g Including balances of the German Railways Fund from 1994 onward and the Inherited Debt Fund from 1995 onward.
h The 1998 outlays would have risen by 5.4 percentage points of GDP if account had been taken of the assumption by the the central Government of the debt of the Japan Railway Settlement Corporation and the National Forest Special Account.

Table A.12.
SELECTED COUNTRIES: REAL EFFECTIVE EXCHANGE RATES, BROAD MEASUREMENT, 1991-1999[a]

1990 = 100

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Developed economies									
Australia	98.5	91.0	85.6	89.8	87.6	96.3	97.9	90.1	93.1
Austria	99.7	103.7	108.0	109.8	112.6	111.5	108.2	109.0	108.6
Belgium	100.7	104.4	106.7	110.3	113.4	112.3	108.0	109.2	110.2
Canada	97.5	91.3	88.9	88.6	92.2	91.5	92.6	90.6	89.4
Denmark	98.8	102.3	104.5	104.9	108.0	108.6	106.4	109.4	111.0
Finland	95.0	83.3	74.2	79.5	85.4	84.5	82.1	81.0	79.7
France	98.2	101.9	103.6	103.1	103.9	104.2	99.5	101.4	99.4
Germany	98.1	100.9	101.4	100.2	105.4	101.2	95.6	97.0	93.9
Greece	102.0	106.3	108.1	106.6	108.3	113.8	115.3	111.9	114.5
Ireland	98.3	101.6	96.3	97.7	97.9	100.4	101.1	98.7	96.9
Italy	98.9	96.0	81.3	79.6	76.1	84.1	85.0	85.3	83.3
Japan	104.5	106.3	121.3	126.0	127.1	108.6	103.3	100.8	109.0
Netherlands	97.9	101.0	104.0	104.0	105.7	103.8	99.4	101.3	101.3
New Zealand	97.0	89.8	93.5	100.1	107.6	118.0	121.0	105.5	102.0
Norway	99.9	101.9	99.9	98.9	101.3	100.9	102.8	98.5	98.8
Portugal	104.0	111.7	108.1	104.5	104.5	106.1	105.1	105.0	105.7
Spain	98.5	95.6	83.6	79.9	83.2	83.5	79.9	80.3	79.1
Sweden	98.6	97.3	81.7	83.8	90.9	95.8	91.8	90.8	87.6
Switzerland	100.9	101.2	105.1	111.5	118.4	116.8	109.4	112.0	112.3
United Kingdom	102.8	99.9	91.7	92.6	89.6	92.4	106.4	110.5	109.0
United States	101.0	100.8	103.1	100.3	95.6	100.2	106.3	114.3	114.8
Developing economies									
Argentina	115.5	113.5	115.1	111.5	109.1	113.3	120.8	123.3	125.6
Brazil	80.5	73.1	82.4	94.3	100.5	99.0	105.2	104.0	79.0
Chile	106.1	113.8	113.9	114.0	120.4	126.9	135.4	129.1	122.7
Colombia	103.4	108.7	110.3	118.4	117.2	121.8	133.0	126.3	113.6
Ecuador	107.3	111.7	129.0	137.6	135.0	137.3	148.6	152.9	114.8
Hong Kong SAR[b]	103.1	105.8	111.2	114.0	112.5	120.8	131.0	137.5	120.3
India	85.4	78.9	75.4	77.8	75.4	74.9	82.5	80.2	87.0
Indonesia	100.7	99.3	101.2	100.0	98.5	103.3	96.5	47.7	77.5
Korea, Republic of	97.4	89.5	87.2	85.8	87.3	89.7	84.2	65.8	78.6
Kuwait	124.0	146.1	147.4	148.5	140.1	147.8	156.1	162.5	151.7
Malaysia	98.6	106.2	109.3	106.0	105.9	111.1	108.5	83.3	83.8
Mexico	106.2	107.8	116.7	112.2	79.0	89.9	102.9	102.6	109.2
Morocco	101.0	100.7	104.1	104.9	108.0	112.0	111.4	116.0	113.4
Nigeria	90.8	74.1	93.9	141.5	224.4	295.6	342.5	385.5	372.6
Pakistan	100.0	98.0	98.7	104.8	105.1	105.9	110.6	110.1	108.8
Peru	93.4	98.6	91.2	97.9	98.3	102.6	106.6	106.5	95.0
Philippines	97.0	105.6	97.4	104.3	103.5	114.8	107.9	85.8	89.2
Saudi Arabia	102.1	98.3	102.8	99.8	96.3	103.5	114.8	126.2	124.3
Singapore	102.3	105.0	105.9	108.9	110.0	114.8	116.8	113.4	104.8
South Africa	103.4	103.3	102.7	98.4	97.0	90.9	97.5	86.1	88.9
Taiwan Province of China	102.8	100.8	97.7	96.4	97.4	95.0	96.2	87.5	81.1
Thailand	102.1	98.5	99.9	99.2	97.5	105.5	97.4	86.8	101.3
Turkey	97.3	89.3	93.0	73.1	76.1	74.9	79.0	78.7	78.6
Venezuela	99.8	100.7	104.1	109.4	139.5	119.5	139.8	157.9	161.3

Source: Morgan Guaranty Trust Company, *World Financial Markets.*

[a] Indices based on a "broad" measure currency basket of 22 OECD currencies and 23 developing-economy currencies (mostly Asian and Latin American). The real effective exchange rate, which adjusts the nominal index for relative price changes, gauges the effect on international price competitiveness of the country's manufactures due to currency changes and inflation differentials. A rise in the index implies a fall in competitiveness and vice versa.The relative price changes are based on indices most closely measuring the prices of domestically produced finished manufactured goods, excluding food and energy, at the first stage of manufacturing. The weights for currency indices are derived from 1990 bilateral trade patterns of the corresponding countries.

[b] Special Administrative Region of China.

II. INTERNATIONAL TRADE

Table A.13.
WORLD TRADE: CHANGES IN VALUE AND VOLUME OF EXPORTS AND IMPORTS, BY MAJOR COUNTRY GROUP, 1991-2000

Annual percentage change										
	1991	1992	1993	1994	1995	1996	1997	1998	1999[b]	2000[c]
Dollar value of exports										
World	2.5	7.1	0.1	13.5	19.4	4.3	3.5	-2.3	3.9	10
Developed economies	2.0	5.9	-2.6	12.5	18.9	2.6	2.3	0.3	2.0	8½
of which:										
North America	5.3	6.1	4.7	11.2	14.6	6.4	9.3	-0.7	5.0	13¼
Western Europe	-0.5	5.4	-6.9	13.7	22.5	3.0	-1.5	1.8	0.1	6¾
Japan	9.5	8.0	6.6	9.6	11.6	-7.3	2.5	-7.9	4.3	6
Economies in transition	-14.1	8.9	5.6	17.5	29.1	8.0	2.2	-2.1	4.2	14¾
Central and Eastern Europe[c]	-7.5	7.5	◆8.8	16.3	30.1	5.7	6.5	13.5	0.7	8
Former Soviet Union/CIS[d]	-21.0	10.5	1.9	19.0	27.9	10.9	-1.8	-17.0	8.7	22¾
Developing countries	5.9	10.2	6.3	15.5	19.5	7.6	6.4	-6.5	8.3	13
Latin America and the Caribbean	0.6	6.7	9.4	16.4	20.9	10.2	10.4	-2.4	5.9	13½
Africa	-2.8	1.1	-9.6	2.7	12.5	19.7	2.5	-15.0	12.7	16
Western Asia	-9.0	7.4	-1.0	6.6	12.3	13.6	-5.7	-24.1	23.5	22¼
Eastern and Southern Asia	14.0	12.8	10.7	16.8	21.3	5.0	4.0	-6.9	7.1	10¾
China	15.8	18.1	7.1	33.1	22.9	1.6	20.8	0.5	6.7	14¼
Memo items:										
Fuel exporters	-5.4	5.2	-3.4	5.9	15.9	19.5	0.5	-9.9	14.4	17¼
Non-fuel exporters	10.8	12.0	9.0	18.5	21.3	4.4	6.7	-4.7	4.5	10
Dollar value of imports										
World	3.0	6.9	-1.2	13.3	19.4	4.8	2.8	-2.3	5.4	10¾
Developed economies	0.7	4.4	-5.8	13.4	18.0	3.6	2.6	1.9	5.7	9¾
of which:										
North America	-1.1	7.9	8.7	13.7	11.3	6.2	10.3	4.6	11.8	12¼
Western Europe	1.5	3.9	-13.1	13.0	20.7	2.3	0.0	3.8	2.3	8¼
Japan	0.7	-1.6	3.6	13.9	22.0	4.0	-3.0	-17.2	8.3	13½
Economies in transition	-16.7	5.2	0.8	13.0	33.4	13.9	9.0	0.5	-4.0	11¼
Central and Eastern Europe[c]	-3.0	14.0	◆14.1	14.1	37.0	16.5	6.7	13.0	3.1	10¾
Former Soviet Union/CIS[d]	-30.1	-6.7	-21.3	10.2	24.4	6.7	15.9	-19.0	-21.4	13
Developing countries	12.4	14.0	9.7	13.0	21.0	6.3	4.3	-10.2	5.8	13¾
Latin America and the Caribbean	17.8	22.2	11.6	18.6	11.6	9.7	16.2	5.2	-3.6	12
Africa	-1.3	9.6	-4.9	5.8	21.2	2.0	6.0	-1.0	5.4	8½
Western Asia	9.5	11.1	6.3	-7.9	23.1	9.3	0.6	-6.4	5.0	8¾
Eastern and Southern Asia	14.0	11.9	10.0	18.4	24.8	5.3	2.0	-20.0	8.7	15
China	19.6	26.3	27.9	12.2	11.6	7.6	2.5	-1.5	18.5	22
Memo items:										
Fuel exporters	14.4	16.1	-1.6	3.9	9.5	7.8	7.1	-5.7	9.4	15¾
Non-fuel exporters	12.0	13.9	12.6	15.4	23.8	5.8	3.7	-12.0	3.9	12½

Table A.13 (continued)

	1991	1992	1993	1994	1995	1996	1997	1998	1999[b]	2000[c]
Volume of exports										
World	4.1	5.4	4.3	10.5	9.4	4.8	9.3	3.6	4.8	8
Developed economies	3.3	3.9	2.5	9.5	7.3	4.2	9.2	4.0	4.3	9
of which:										
North America	5.0	6.8	5.3	9.0	9.1	6.2	10.9	3.7	5.2	11½
Western Europe	2.4	3.5	2.8	11.4	7.6	3.8	7.7	5.4	4.4	8¾
Japan	2.5	1.5	-2.4	1.7	3.3	0.6	9.6	-3.7	2.0	6¾
Economies in transition	-18.0	11.0	5.7	2.7	13.7	6.0	-0.9	6.9	-2.6	4¾
Central and Eastern Europe[c]	-8.1	8.5	♦8.9	0.2	16.7	4.5	0.8	15.0	0.6	4¾
Former Soviet Union/CIS[d]	-27.7	14.2	1.9	5.8	10.0	7.9	-2.9	0.2	-6.2	4¾
Developing countries	10.8	9.0	8.7	14.1	13.7	6.5	9.9	1.9	6.8	6¼
Latin America and the Caribbean	4.7	6.3	10.3	9.2	9.9	9.3	12.8	7.8	5.2	6½
Africa	2.8	0.8	-0.9	11.7	7.3	8.2	5.2	-0.9	2.2	1¼
Western Asia	2.9	8.0	7.3	8.1	6.0	9.0	-0.7	-1.5	-0.5	-2¼
Eastern and Southern Asia	15.8	10.5	10.6	14.5	16.6	5.8	9.3	0.1	9.8	7
China	18.2	15.7	6.8	31.0	18.9	2.4	26.3	4.1	7.1	12
Memo items:										
Fuel exporters	6.1	6.9	2.6	5.7	9.0	15.1	4.9	1.2	5.8	6¼
Non-fuel exporters	12.7	10.0	9.1	15.0	16.5	5.9	11.3	2.9	7.5	6¼
Volume of imports										
World	4.4	5.9	4.9	10.5	7.8	6.1	9.0	3.0	6.4	9
Developed economies	2.5	4.4	1.1	11.1	7.0	4.9	8.7	5.9	6.7	8
of which:										
North America	-0.9	7.9	9.6	12.0	7.2	5.6	13.3	10.3	11.5	9¾
Western Europe	4.2	3.4	-2.8	10.0	5.9	4.4	7.6	6.1	4.4	8
Japan	4.0	-0.4	2.9	13.6	12.5	3.5	2.7	-10.0	4.3	2¾
Economies in transition	-22.5	0.8	0.8	9.6	9.9	13.8	9.0	2.0	-1.5	9¾
Central and Eastern Europe[c]	-2.5	12.0	♦14.3	13.0	11.4	17.9	7.6	10.0	3.3	9½
Former Soviet Union/CIS[d]	-38.5	-13.4	-21.5	1.3	6.0	2.4	13.6	-15.0	-21.6	10¾
Developing countries	14.7	11.3	15.3	9.5	9.7	8.5	10.2	-4.7	6.4	11¼
Latin America and the Caribbean	20.8	22.5	10.8	14.4	4.2	8.4	23.1	7.2	-3.6	10½
Africa	-0.7	-0.3	-2.1	2.0	10.8	3.8	6.3	2.0	5.6	5¾
Western Asia	12.3	9.0	12.7	-11.1	11.3	11.8	6.4	-2.6	7.8	8¼
Eastern and Southern Asia	16.8	9.7	17.4	14.8	12.5	8.2	8.4	-12.7	8.6	11½
China	21.4	23.1	36.4	9.1	0.1	11.4	9.4	6.0	18.9	19
Memo items:										
Fuel exporters	16.7	13.6	4.1	-0.2	-1.0	11.2	13.8	-0.2	11.2	14¾
Non-fuel exporters	14.9	11.6	20.2	11.9	11.6	8.7	10.1	-6.7	3.9	9¼

Source: United Nations, based on data of United Nations Statistics Division, ECE, ECLAC and IMF.

♦ Indicates break in the series.
a Preliminary estimates.
b Forecast.
c As of 1993, transactions between the Czech Republic and Slovakia are recorded as foreign trade.
d CIS countries since 1992.

Table A.14
DIRECTION OF TRADE: EXPORTS (F.O.B.), 1985-1999

		Destination[a]														
		World[b]	Devd.	EU	US	Japan	EIT	EE	CIS	RF	Devg.	LAC	Africa	SSA	WA	ESA
		Bn. $	Percentage													
World[b]	1985	1 874.5	68.1	37.0	17.5	5.9	..	..	..	..	23.8	4.3	3.7	1.3	5.1	10.7
	1990	3 378.4	72.2	43.7	14.5	6.1	..	..	..	..	22.8	3.8	2.7	1.0	3.5	12.7
	1996	5 281.6	64.7	36.7	15.0	5.9	4.6	2.5	1.8	1.1	29.3	5.1	2.2	0.8	3.4	18.5
	1997	5 630.1	64.8	35.5	15.3	5.4	4.7	2.5	1.9	1.1	29.3	5.6	2.1	0.7	3.4	18.2
	1998	5 515.8	67.5	38.3	16.4	4.6	4.7	2.7	1.6	1.0	26.6	5.9	2.3	0.8	3.4	15.1
	1999[c]	5 623.7	68.3	37.8	18.1	4.9	4.2	2.6	1.2	0.6	25.6	5.4	2.2	0.8	3.5	15.7
Developed economies (Devd.)	1985	1 266.3	72.7	42.4	16.8	3.5	..	..	..	..	23.0	4.5	4.1	1.2	5.1	9.3
	1990	2 444.4	76.4	50.3	12.4	4.2	..	..	..	..	19.9	3.9	2.8	1.0	3.3	9.9
	1996	3 515.6	70.1	44.7	12.5	3.9	3.9	2.6	1.1	0.8	25.0	5.3	2.3	0.7	3.4	14.0
	1997	3 739.5	70.2	43.0	12.6	3.5	4.2	2.7	1.2	0.9	24.7	5.8	2.1	0.6	3.5	13.3
	1998	3 727.4	72.6	45.8	13.4	3.1	4.3	3.0	1.0	0.8	22.3	6.1	2.3	0.6	3.5	10.4
	1999[c]	3 725.9	73.0	45.7	14.8	3.2	3.9	2.9	0.7	0.4	21.6	5.9	2.2	0.6	3.6	11.1
of which:																
European Union (EU)	1985	708.2	77.8	59.2	10.0	1.2	..	..	..	..	16.8	2.1	5.3	1.6	5.2	4.2
	1990	1 488.4	81.8	65.9	7.0	2.1	..	..	..	..	13.2	1.8	3.5	1.2	3.4	4.4
	1996	2 074.7	76.5	61.4	7.0	2.2	5.9	4.1	1.5	1.2	16.0	2.6	2.9	0.9	3.7	6.8
	1997	2 213.6	76.9	58.8	7.2	1.8	6.3	4.2	1.7	1.3	15.3	2.5	2.6	0.7	3.8	6.4
	1998	2 258.1	78.4	61.4	7.8	1.6	6.5	4.6	1.4	1.0	13.9	2.6	2.8	0.8	3.5	4.9
	1999[c]	2 185.7	79.1	62.7	8.7	1.8	6.1	4.5	1.0	0.6	12.7	2.5	2.8	0.8	3.9	5.0
United States (US)	1985	213.1	61.4	24.3	0.0	10.6	..	..	..	..	36.6	14.6	3.5	0.9	5.2	13.4
	1990	393.1	63.9	26.3	0.0	12.4	..	..	..	..	34.6	13.7	2.0	0.5	3.4	15.5
	1996	622.9	56.5	20.5	0.0	10.8	1.2	0.4	0.8	0.5	42.2	17.6	1.7	0.4	3.7	19.2
	1997	687.6	55.5	20.6	0.0	9.6	1.2	0.5	0.7	0.5	43.3	19.5	1.7	0.3	3.6	18.6
	1998	680.4	56.6	22.0	0.0	8.5	1.2	0.4	0.7	0.5	42.2	20.9	1.6	0.3	4.0	15.6
	1999[c]	690.5	57.4	22.0	0.0	8.4	0.9	0.4	0.4	0.3	41.2	20.5	1.4	0.3	4.0	16.1
Japan	1985	177.2	58.0	13.1	37.6	0.0	..	..	..	..	39.4	4.2	2.2	0.6	6.5	26.4
	1990	287.7	58.6	20.4	31.7	0.0	..	..	..	..	40.1	3.4	1.9	0.9	3.5	31.3
	1996	411.3	47.1	15.4	27.5	0.0	0.5	0.2	0.3	0.2	52.3	4.1	1.4	0.5	2.7	44.1
	1997	421.1	48.3	15.6	28.1	0.0	0.6	0.3	0.3	0.2	51.1	4.7	1.3	0.4	2.9	42.2
	1998	388.0	54.3	18.5	30.9	0.0	0.6	0.3	0.3	0.3	45.0	5.0	1.5	0.5	3.7	34.8
	1999[c]	414.7	54.2	17.9	31.2	0.0	0.5	0.3	0.2	0.1	45.0	4.2	1.3	0.5	3.0	37.0
Economies in transition (EIT)	1996	220.0	50.4	41.1	4.4	1.6	35.5	13.7	19.5	8.5	12.8	1.1	1.4	0.4	3.8	6.5
	1997	232.5	51.8	43.4	3.7	1.5	35.0	13.3	19.3	8.2	12.5	1.4	1.3	0.2	4.0	5.9
	1998	228.4	56.3	47.6	4.7	1.2	31.9	13.0	16.6	6.9	11.3	1.5	1.4	0.3	4.1	4.3
	1999[c]	225.9	58.6	49.1	5.3	1.2	28.8	12.9	13.0	4.2	9.7	1.0	1.5	0.3	4.6	5.3
of which:																
Eastern Europe (EE)	1996	95.8	63.4	58.6	2.5	0.4	27.2	18.5	7.9	4.7	8.9	0.9	2.0	0.6	3.0	3.0
	1997	105.2	66.2	61.1	2.8	0.4	26.4	17.2	8.4	5.0	7.1	0.7	1.4	0.3	2.7	2.3
	1998	117.4	70.5	65.2	3.0	0.3	23.3	16.3	6.1	3.3	5.9	0.8	1.4	0.4	2.4	1.3
	1999[c]	114.4	72.2	66.3	3.5	0.3	21.8	16.2	4.3	1.5	4.6	0.6	1.2	0.3	2.6	1.7

Table A.14 (continued)

		Destination[a]														
		World[b]	Devd.	EU	US	Japan	EIT	EE	CIS	RF	Devg.	LAC	Africa	SSA	WA	ESA
		Bn. $	Percentage													
Commonwealth of Independent States (CIS)	1996	117.5	40.2	26.9	6.1	2.7	41.3	10.4	27.9	10.7	16.6	1.4	1.0	0.2	4.7	9.6
	1997	119.8	39.0	27.5	4.7	2.7	42.0	10.5	28.3	10.4	17.8	2.0	1.2	0.2	5.3	9.3
	1998	102.3	40.2	27.3	6.8	2.3	40.8	10.2	27.8	10.3	18.2	2.5	1.5	0.2	6.3	7.9
	1999[c]	101.2	42.9	29.3	7.4	2.3	36.3	10.2	22.5	7.5	16.2	1.5	1.9	0.4	7.2	9.9
of which:																
Russian Federation (RF)	1996	84.0	48.9	32.4	7.6	3.5	33.2	11.7	18.4	0.0	16.5	1.3	0.8	0.2	4.3	10.0
	1997	85.1	47.1	32.9	5.8	3.4	35.1	12.0	19.5	0.0	16.4	2.0	0.9	0.1	4.7	8.8
	1998	71.4	48.8	32.3	8.4	3.0	33.5	11.4	19.0	0.0	16.8	2.8	1.0	0.1	5.5	7.5
	1999[c]	71.8	50.6	33.5	9.0	2.9	30.3	11.5	14.9	0.0	15.1	1.5	1.5	0.4	5.5	9.8
Developing countries (Devg.)	1985	490.3	64.0	24.5	22.9	13.1	..	..	..	..	28.7	4.7	2.7	1.5	5.4	16.0
	1990	828.0	61.6	23.5	22.3	12.3	..	..	..	..	32.4	4.1	2.5	1.5	3.9	21.9
	1996	1 542.7	54.5	17.9	22.4	11.0	1.6	0.6	0.9	0.6	41.3	5.2	2.3	1.2	3.3	30.5
	1997	1 655.1	54.3	17.5	23.2	10.2	1.7	0.7	0.9	0.7	42.0	5.6	2.3	1.2	3.1	30.9
	1998	1 557.1	57.1	19.0	25.5	8.8	1.6	0.7	0.8	0.5	39.2	5.8	2.4	1.2	3.2	27.7
	1999[c]	1 669.1	59.3	18.5	27.3	9.4	1.4	0.7	0.6	0.3	36.7	4.9	2.3	1.1	3.2	27.2
of which:																
Latin America and the Caribbean (LAC)	1985	99.3	72.1	23.4	40.5	5.1	..	..	..	..	22.4	12.6	2.8	0.8	2.7	4.3
	1990	127.3	72.2	24.6	39.2	5.6	..	..	..	..	24.3	16.6	1.4	0.4	2.1	4.2
	1996	257.3	68.8	14.7	47.7	3.5	1.1	0.6	0.4	0.3	28.3	20.2	1.2	0.3	1.3	5.5
	1997	287.7	68.6	14.0	48.7	3.2	1.1	0.5	0.5	0.5	27.8	20.5	1.3	0.3	1.3	4.8
	1998	285.8	70.0	13.9	51.1	2.5	1.1	0.4	0.5	0.4	26.4	20.1	1.1	0.3	1.3	3.8
	1999[c]	289.9	72.5	13.5	52.2	2.8	1.0	0.4	0.4	0.4	23.4	17.6	1.0	0.3	1.3	3.9
Africa	1985	78.5	72.8	52.6	14.7	3.0	..	..	..	..	12.9	3.3	4.3	3.4	2.5	2.8
	1990	98.8	71.0	50.6	14.8	3.0	..	..	..	..	14.2	1.1	7.0	5.1	2.3	3.7
	1996	117.2	66.5	45.9	14.3	2.8	1.3	1.0	0.3	0.2	24.9	2.7	10.2	7.7	3.6	8.4
	1997	119.4	65.2	44.2	15.0	2.6	1.3	0.9	0.2	0.1	25.8	3.0	10.2	7.8	3.5	9.0
	1998	107.0	66.3	46.2	14.1	3.2	1.6	1.0	0.3	0.2	25.8	2.8	9.9	7.4	3.2	10.0
	1999[c]	114.0	66.8	46.7	14.2	3.1	1.6	0.9	0.5	0.4	23.6	2.8	9.7	7.1	3.8	9.6
of which:																
Sub-Saharan Africa (SSA)	1985	21.2	75.3	54.6	16.4	2.5	..	..	..	..	18.4	2.5	8.9	6.4	1.8	5.2
	1990	28.2	74.9	49.9	16.8	3.4	..	..	..	..	21.2	1.7	11.7	9.1	1.3	6.5
	1996	35.1	68.2	43.7	19.4	2.8	1.5	1.0	0.3	0.3	28.6	2.3	13.5	9.7	2.4	10.4
	1997	33.8	66.4	40.7	20.8	2.7	1.9	1.2	0.2	0.1	29.6	1.7	13.7	10.0	2.3	11.9
	1998	33.3	63.8	43.1	16.6	2.5	2.4	1.3	0.5	0.2	31.7	1.4	15.0	11.0	2.3	12.9
	1999[c]	33.8	64.3	42.1	18.0	2.5	2.6	1.0	1.0	0.6	30.7	1.5	15.2	11.1	2.8	12.0
Western Asia (WA)	1985	105.3	57.7	29.1	6.3	20.5	..	..	..	..	32.5	4.2	2.6	1.4	11.7	14.0
	1990	149.4	59.7	25.4	13.7	17.7	..	..	..	..	31.0	3.0	2.9	0.9	10.6	14.6
	1996	190.8	51.3	22.9	10.0	16.4	3.5	1.1	2.3	1.1	37.4	1.3	2.7	0.9	8.9	24.5
	1997	206.9	51.7	21.8	10.8	16.6	3.9	1.1	2.6	1.4	37.7	1.3	2.8	0.8	7.3	26.3
	1998	168.9	52.6	24.2	12.4	13.8	3.9	1.3	2.4	1.0	35.1	1.3	3.5	1.2	7.7	22.6
	1999[c]	176.0	55.6	23.6	15.0	14.9	3.0	1.1	1.7	0.3	31.7	1.1	3.4	1.2	7.8	21.2

Table A.14 (continued)

		Destination[a]													
		World[b]	Devd.	EU	US	Japan	EIT	EE	CIS	RF	Devg.	LAC	Africa	SSA	WA	ESA
		Bn. $	Percentage													
Eastern and Southern Asia (including China) (ESA)	1985	207.3	59.9	12.0	26.1	17.0	..	..	..	..	35.9	1.7	2.2	1.2	4.5	27.6
	1990	452.4	57.2	16.6	22.0	14.4	..	..	..	..	39.2	1.5	1.7	1.0	2.6	33.3
	1996	977.4	49.9	14.4	19.1	13.0	1.3	0.5	0.8	0.6	47.5	2.3	1.5	0.7	2.7	41.0
	1997	1 041.2	49.6	14.6	19.5	11.7	1.5	0.6	0.8	0.6	48.6	2.6	1.6	0.8	2.7	41.6
	1998	995.5	53.2	16.6	21.6	10.3	1.4	0.7	0.7	0.5	45.0	2.8	1.8	0.8	3.0	37.4
	1999[c]	1 089.1	55.5	16.1	24.0	10.9	1.2	0.7	0.4	0.2	42.4	2.4	1.7	0.7	2.9	36.2

Source: UN/DESA, based on IMF, *Direction of Trade Statistics*.

a Owing to incomplete specification of destinations in underlying data, shares of trade to destinations do not add up to 100 per cent.
b Including data for EITs; before 1994, data for EITs are highly incomplete.
c Estimates.

Table A.15.
COMPOSITION OF WORLD MERCHANDISE TRADE: EXPORTS, 1985-1998

Billions of dollars and percentage

Exporting country group	Total exports (billions of dollars)			Primary commodities											
				Total			*of which:*								
							Food			Agricultural raw materials			Fuels		
	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998
World (billions of dollars)	1606.3	2848.5	5366.2	596.1	797.5	962.1	160.2	268.8	411.6	77.7	119.2	152.4	332.1	372.7	334.0
World (percentage share)				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Developed economies	1021.1	1865.1	3617.9	40.0	45.1	51.7	59.4	63.0	64.6	60.5	62.2	60.4	24.6	23.0	32.3
Economies in transition[a]	89.4	124.6	218.5	7.2	6.1	6.2	3.4	3.5	3.5	5.1	5.3	6.9	9.7	8.2	8.4
Developing countries	495.7	858.9	1529.8	52.7	48.8	42.1	37.2	33.5	31.9	34.4	32.5	32.8	65.7	68.8	59.3
Africa	78.1	92.5	112.0	11.5	8.5	7.2	6.1	4.1	4.1	4.6	5.1	4.5	16.0	13.7	12.2
Latin America	107.6	154.3	295.1	12.7	11.0	11.9	16.1	14.5	14.2	8.0	7.3	9.3	11.9	9.3	9.1
Eastern and Southern Asia	210.8	459.1	960.6	13.7	13.4	12.4	12.9	13.1	11.7	20.3	19.0	17.7	12.7	12.3	10.9
Western Asia	99.2	153.0	162.2	14.8	16.0	10.6	2.2	1.9	1.8	1.4	1.1	1.3	25.1	33.6	27.2
Memo items:															
Sub-Saharan Africa	22.5	29.7	33.2	3.1	2.6	2.6	4.6	2.6	2.6	3.0	3.1	3.1	2.3	2.3	2.4
Least developed countries	24.3	58.4	26.0	2.5	2.9	1.5	2.4	2.0	1.1	2.4	3.0	1.8	2.4	3.9	1.8

Table A.15 (continued)

Exporting country group	Manufactures														
	Total (billions of dollars)			*of which:* Textiles			Chemicals			Machinery and transport			Metals		
	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998
World (billions of dollars)	983.4	1992.0	4226.8	86.8	178.2	355.2	120.5	236.4	495.1	472.4	953.1	2192.7	88.3	152.7	250.7
World (percentage share)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Developed economies	77.1	73.3	70.6	46.2	42.1	41.3	82.7	81.0	81.1	83.8	79.7	75.3	70.3	65.2	62.6
Economies in transition[a]	4.6	3.7	3.5	3.3	2.1	4.7	4.9	3.6	3.5	4.8	3.7	2.1	7.2	8.5	13.9
Developing countries	18.3	23.0	25.9	50.5	55.7	54.0	12.4	15.4	15.5	11.4	16.5	22.6	22.3	26.3	23.5
Africa	1.3	1.1	0.9	2.0	2.5	2.7	1.8	1.4	0.9	0.3	0.3	0.3	5.5	6.2	3.5
Latin America	3.4	3.3	4.1	3.2	3.4	6.0	3.7	2.9	2.9	2.6	2.6	4.0	8.5	9.4	7.5
Eastern and Southern Asia	12.5	17.3	19.5	42.3	47.3	41.5	5.0	8.2	9.6	8.0	13.2	17.8	6.9	8.7	10.5
Western Asia	1.2	1.3	1.4	3.0	2.5	3.7	1.9	2.9	2.1	0.5	0.4	0.6	1.4	2.0	1.9
Memo items:															
Sub-Saharan Africa	0.4	0.5	0.2	0.5	0.5	0.5	0.4	0.3	0.1	0.1	0.2	0.1	2.4	2.2	0.6
Least developed countries	0.7	1.6	0.3	1.6	1.6	1.8	0.6	1.6	0.7	0.6	1.6	0.1	2.3	2.6	0.4

Source: UN/DESA.

[a] Data for 1998 including trade flows between the States of the former USSR. Prior to 1992, these flows were considered internal.

Table A.16.
COMPOSITION OF WORLD MERCHANDISE TRADE: IMPORTS, 1985-1998

Billions of dollars and percentage

Importing country group	Total imports (billions of dollars)			Primary commodities											
				Total			*of which:*								
							Food			Agricultural raw materials			Fuels		
	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998
World (billions of dollars)	1606.3	2848.5	5366.2	596.1	797.5	976.8	160.2	268.8	409.7	77.7	119.2	248.3	332.1	372.7	341.8
World (percentage share)				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Developed economies	1090.0	1941.6	3683.7	71.9	68.6	68.2	65.1	66.2	71.2	64.5	66.0	41.2	76.2	69.0	65.8
Economies in transition[a]	92.3	128.9	241.4	5.8	5.5	5.4	7.6	8.2	6.1	6.7	3.9	2.0	4.5	4.2	5.7
Developing countries	424.0	778.0	1441.1	22.3	25.9	26.4	27.3	25.6	22.6	28.8	30.1	56.9	19.2	26.8	28.5
Africa	60.3	98.8	98.9	3.1	3.0	2.8	6.1	4.9	3.2	4.1	3.7	19.2	1.5	1.4	2.3
Latin America	75.1	110.7	319.1	4.3	4.4	5.2	4.4	4.7	5.7	4.2	3.9	3.8	4.4	4.5	4.7
Eastern and Southern Asia	204.3	467.3	848.1	11.0	15.2	15.7	9.2	10.9	9.9	17.2	19.8	13.0	10.7	18.3	20.0
Western Asia	84.3	101.2	175.0	4.0	3.3	2.8	7.6	5.2	3.8	3.2	2.8	20.8	2.7	2.7	1.5
Memo items:															
Sub-Saharan Africa	20.6	29.6	37.6	1.1	1.0	0.9	2.2	1.5	1.3	0.9	0.8	0.5	0.8	0.7	0.5
Least developed countries	18.6	27.4	36.1	1.4	1.0	0.9	2.1	1.6	1.3	1.3	1.7	0.7	1.8	2.7	0.4

Table A.16 (continued)

Importing country group	Manufactures														
	Total (billions of dollars)			*of which:*											
				Textiles			Chemicals			Machinery and transport			Metals		
	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998	1985	1990	1998
World (billions of dollars)	983.4	1992.0	4226.7	86.8	178.2	345.4	120.5	236.4	516.8	472.4	953.1	2171.9	88.3	152.7	253.4
World (percentage share)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Developed economies	65.6	68.0	68.8	69.9	69.5	69.3	60.1	61.6	66.6	65.2	66.8	68.4	58.3	63.9	66.2
Economies in transition[a]	5.7	4.2	4.2	5.3	2.6	5.6	6.6	4.4	4.6	5.9	5.1	3.7	8.4	4.4	3.8
Developing countries	28.6	27.9	27.0	24.7	27.9	25.2	33.3	34.0	28.8	28.9	28.1	27.9	33.2	31.7	30.0
Africa	4.0	3.6	1.6	2.6	2.5	1.5	4.7	4.5	2.2	4.3	4.0	1.5	3.2	3.2	2.1
Latin America	4.9	3.8	6.2	2.3	2.1	4.2	7.3	5.9	7.5	5.6	4.0	6.5	3.4	3.4	5.4
Eastern and Southern Asia	13.7	16.9	15.9	13.5	19.8	16.2	16.2	19.4	16.1	13.5	16.9	16.5	19.5	20.0	19.2
Western Asia	6.0	3.6	3.3	6.2	3.5	3.3	5.1	4.1	3.1	5.6	3.2	3.4	7.1	5.0	3.4
Memo items:															
Sub-Saharan Africa	1.4	1.1	0.7	1.2	0.8	0.6	1.6	1.1	0.7	1.6	1.3	0.7	0.8	0.7	0.6
Least developed countries	1.2	1.0	0.6	1.3	1.2	1.0	1.3	0.9	0.5	1.4	1.1	0.7	0.9	2.2	0.7

Source: UN/DESA.

[a] Data for 1998 including trade flows between the States of the former USSR. Prior to 1992, these flows were considered internal.

Table A.17.
INDICES OF PRICES OF PRIMARY COMMODITIES, 1980-1999

Annual percentage change[a]

	Non-fuel commodities[b]							Manufac-tured export prices[c]	Real prices of non-fuel commodities[d]	*Memo item:* crude petroleum[e]
	Food	Tropical beverages	Vegetable oilseeds and oils	Agricultural raw materials	Minerals and metals	Combined index				
						Dollar	SDR			
1980	65.5	-6.3	-13.3	10.6	11.6	27.6	27.6	11.1	14.9	21.5
1981	-20.0	-17.8	-4.3	-12.5	-16.0	-17.0	-9.0	-6.0	-11.7	-3.5
1982	-31.8	-5.2	-19.6	-13.4	-13.2	-21.8	-16.4	-2.1	-20.1	-7.2
1983	5.3	4.3	18.9	6.8	7.6	6.3	9.8	-3.3	9.9	-10.3
1984	-15.9	14.6	34.6	0.9	-7.1	-3.4	0.0	-3.4	0.0	-2.9
1985	-13.8	-9.1	-30.6	-9.9	-4.8	-12.3	-10.7	0.0	-12.3	-4.2
1986	10.0	24.0	-38.0	2.0	-5.0	4.0	-10.0	19.8	-13.2	-49.9
1987	6.4	-34.7	17.7	16.7	18.9	2.9	-6.7	12.6	-8.7	31.0
1988	29.9	1.2	31.5	8.4	45.1	26.2	21.4	8.2	16.6	-19.7
1989	5.9	-14.6	-11.5	0.0	0.0	0.0	4.9	-1.1	1.1	21.6
1990	-6.2	-11.4	-12.9	4.7	-9.8	-5.9	-11.2	9.9	-14.4	28.6
1991	-6.6	-8.1	8.1	-0.7	-9.5	-6.3	-7.4	0.0	-6.3	-16.4
1992	-2.1	-14.0	7.5	-3.7	-3.7	-3.4	-5.7	3.0	-6.2	-1.0
1993	0.7	6.1	0.0	-6.2	-14.7	-3.5	-2.4	-5.8	2.5	-11.4
1994	10.1	75.0	24.4	15.7	12.7	18.0	13.6	2.1	15.6	-4.9
1995	5.9	1.1	10.3	15.0	20.2	9.9	4.3	11.1	-1.1	8.6
1996	6.8	-15.2	-4.2	-9.9	-12.1	-4.2	1.0	-3.6	-0.6	20.3
1997	-3.5	33.3	-0.9	-10.3	0.0	0.0	5.2	-7.5	8.2	-7.9
1998	-13.8	-17.3	7.1	-10.8	-16.0	-13.0	-11.8	-2.0	-11.2	-34.3
1999	-18.1	-20.9	-23.3	-10.3	-1.8	-14.2	-14.4	-2.1	-12.3	42.3
1997 I	-3.9	19.9	4.2	-9.3	-3.1	-2.3	0.0	-6.5	4.5	12.8
II	-5.6	47.3	-3.7	-8.7	0.5	0.2	5.0	-5.7	6.2	-7.5
III	-5.4	36.6	-6.8	-10.9	8.2	0.2	6.3	-8.5	9.5	-10.9
IV	1.4	32.3	1.5	-13.0	-2.4	0.5	6.1	-7.6	8.8	-20.6
1998 I	-9.1	9.9	2.6	-14.6	-16.0	-8.5	-5.2	-5.9	-2.8	-35.7
II	-11.0	-27.9	9.8	-11.6	-18.0	-14.0	-11.1	-6.0	-8.5	-30.0
III	-15.6	-24.5	13.3	-8.5	-17.7	-14.8	-13.2	-3.1	-12.1	-31.6
IV	-19.2	-23.4	6.8	-7.0	-14.0	-15.3	-17.2	-1.0	-14.4	-40.0
1999 I	-19.4	-29.9	-12.0	-6.5	-12.9	-16.8	-19.6	1.1	-17.7	-17.0
II	-23.3	-20.2	-22.4	-10.2	-8.0	-17.4	-17.9	0.0	-17.4	23.4
III	-15.8	-21.8	-30.8	-12.2	3.1	-12.4	-13.4	-1.1	-11.5	62.3
IV	-12.0	-6.6	-30.7	-11.7	11.8	-7.7	-6.5	-3.1	-4.7	112.8

Sources: UNCTAD, *Monthly Commodity Price Bulletin*; United Nations, *Monthly Bulletin of Statistics* and *OPEC Bulletin*.

a For quarterly data, the comparison is with the same quarter of previous year.
b All non-fuel commodity indices are based on 1985.
c Index of prices of manufactures exported by developed countries (1990 base year).
d Combined index of non-fuel commodity prices in dollars deflated by manufactured export price index.
e Composite price of the OPEC basket of seven crudes.

Table A.18.
WORLD OIL SUPPLY AND DEMAND, 1990-2000

Millions of barrels per day

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000[a]
World oil supply[b]											
Developed economies	15.9	16.3	16.6	16.8	17.6	18.0	18.4	18.6	18.4	18.1	18.7
Economies in transition	11.8	10.7	9.2	8.2	7.5	7.3	7.3	7.4	7.5	7.7	7.9
Developing countries	38.0	38.5	40.0	41.1	41.9	43.3	44.8	46.7	48.0	46.7	48.0
OPEC[c]	25.1	25.3	26.5	27.0	27.3	27.7	28.4	29.9	30.8	29.5	30.4
Non-OPEC developing countries[c]	12.9	13.2	13.5	14.1	14.6	15.7	16.4	16.8	17.1	17.2	17.7
Processing gains[d]	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7
World total supply[e]	67.0	66.8	67.1	67.4	68.4	70.1	72.0	74.3	75.5	74.1	76.3
World oil demand[f]											
World total demand	66.4	66.9	67.5	67.6	68.9	69.9	71.6	73.4	73.9	75.0	76.5

Source: United Nations, based on International Energy Agency, *Monthly Oil Market Report*, various issues.

a Forecast.
b Including crude oil, condensates, natural gas liquids (NGLs), oil from non-conventional sources and other sources of supply.
c Ecuador is included in OPEC through 1992 and in non-OPEC developing countries starting in 1993. Gabon is not included in OPEC starting in 1995.
d Net volume gains and losses in refining process (excluding net gain/loss in the economies in transition and China) and marine transportation losses.
e Totals may not add up because of rounding.
f Including deliveries from refineries/primary stocks and marine bunkers, and refinery fuel and non-conventional oils.

III. INTERNATIONAL FINANCE AND FINANCIAL MARKETS

Table A.19.
NET IMF LENDING TO DEVELOPING COUNTRIES, BY FACILITY, 1988-1999

Billions of dollars

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Regular facilities	-2.4	-1.4	-1.1	0.0	-0.2	-0.8	12.5	-2.6	13.0	14.1	-9.8
Repayment terms:											
3-5 years (Credit tranche)[a]	-0.1	-1.6	0.3	1.5	-0.2	0.1	12.4	-1.4	13.6	11.2	-9.6
3.5-7 years (SFF/EAP)[b]	-2.4	-0.5	-0.7	-1.5	-1.5	-1.4	-1.6	-1.3	-0.7	-0.1	0.0
4-10 years (Extended Fund Facility)	0.1	0.7	-0.7	0.0	1.5	0.5	1.8	0.1	0.2	3.1	-0.2
Concessional facilities	0.9	0.2	1.1	0.8	0.2	0.9	1.5	0.2	-0.1	0.2	0.1
in order created:											
Trust Fund[c]	-0.5	-0.4	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
SAF[d]	0.7	0.1	0.2	0.0	-0.1	-0.2	-0.1	-0.4	-0.3	-0.2	-0.2
ESAF/PRGF[d]	0.8	0.5	0.9	0.7	0.4	1.1	1.6	0.5	0.2	0.4	0.2
Additional facilities[e]	0.2	-0.8	1.2	-0.9	-0.2	-0.9	-1.6	-0.7	-0.9	-0.7	0.7
In order created:											
Compensatory financing[f]	0.2	-0.8	1.2	-0.9	-0.2	-0.9	-1.6	-0.7	-0.9	-0.7	0.7
STF[g]					0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	-1.3	-2.0	1.2	-0.1	-0.2	-0.7	12.5	-3.1	12.0	13.7	-9.0
Memo items:											
Selected characteristics of higher conditionality lending agreements											
Number initiated during year	23	12	24	17	13	26	18	20	14	15	16
Average length (months)	25	19	22	26	24	25	23	29	33	29	32
Total amount committed	13.8	1.3	6.4	7.1	3.0	6.6	23.2	5.2	38.4	29.5	13.0

Source: Data of IMF, *International Financial Statistics* and *IMF Survey.*

a Including Supplemental Reserve Facility (SRF) (created December 1997) for use when a sudden and disruptive loss of market confidence causes pressure on the capital account and on reserves, creating a large short-term financing need (higher-cost and shorter-term than regular drawings); adds to commitments under standby or extended arrangements for up to one year, with drawings in two or more tranches.

b Supplementary Financing Facility (SFF) (1979-81) and Enhanced Access Policy (EAP) (1981-present) have provided resources from funds borrowed by IMF from member States on which the Fund pays a higher interest rate than the remuneration paid to countries that have a net-creditor position with the Fund. Thus, users of SFF and EAP resources have paid a higher interest rate than on drawings from ordinary resources, which are partly subsidized (for example, in fiscal 1981/82: 6.3 per cent versus 14.8 per cent for SFF and 13.2 per cent for EAP; by 1985/86 the spread had been much reduced: 7 per cent versus 9.4 per cent and 9.2 per cent). However, up to a 3 percentage point subsidy was made available for IDA-eligible countries and up to half that for countries above IDA but under the maximum for Trust Fund eligibility, in order to reduce interest on SFF drawings towards the rate on ordinary drawings. There has been no subsidy on EAP drawings.

c Mainly using resources from IMF gold sales, the Trust Fund lent during 1977-1981 under one-year adjustment programmes; eligibility was based on maximum per capita income criteria; loans had 10-year maturities, with repayments beginning in the sixth year; the interest rate was 0.5 per cent per year.

d Structural Adjustment Facility (SAF) and Enhanced Structural Adjustment Facility (ESAF) (the first financed mainly from Trust Fund reflows and the second from loans and grants) have made loans to IDA-eligible countries with protracted balance-of-payments problems; funds are disbursed over 3 years (under Policy Framework Paper arrangements), with repayments beginning in 5.5 years and ending in 10 years; the interest rate is 0.5 per cent. On 22 November 1999, the facility was renamed the Poverty Reduction and Growth Facility (PRGF).

e All having final maturity of 7 years and repayments beginning in 3.5 years.

f Compensatory Financing Facility from 1963 to 1988; Compensatory and Contingency Financing Facility (CCFF) from August 1998.

g See description in table A.20.

Table A.20.
NET IMF LENDING TO TRANSITION ECONOMIES, BY FACILITY, 1989-1999

Billions of dollars

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Regular facilities	-0.9	0.1	2.0	1.8	0.1	0.2	4.4	3.7	2.1	3.0	-3.0
Repayment terms:											
3-5 years (Credit tranche)	-0.2	0.4	1.0	1.8	0.1	0.5	4.9	1.2	0.0	-0.8	-3.1
3.5-7 years (SFF/EAP)	-0.7	-0.3	0.2	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	0.0
4-10 years (Extended Fund Facility)	..	..	0.8	0.1	0.0	0.0	-0.5	2.6	2.2	3.9	0.1
Concessional facilities (ESAF)	..	..	..	..	0.0	0.0	0.1	0.2	0.2	0.2	0.1
Additional facilities											
Compensatory financing	0.0	0.0	1.5	-0.1	0.0	-0.7	-0.6	-0.2	0.1	2.9	0.1
STF	..	..	..	..	2.0	2.8	0.9	0.0	0.0	-0.5	-0.8
Total	-0.9	0.1	3.5	1.7	2.1	2.3	4.8	3.7	2.4	5.6	-3.6
Memo items:											
Selected characteristics of higher conditionality lending agreements											
Number initiated during year	0	3	5	6	9	8	12	12	7	6	4
Average length (months)	0	12	12	12	18	18	13	28	21	32	19
Total amount committed	0.0	1.6	4.9	1.5	1.6	2.1	9.2	13.2	2.1	3.4	5.6

Source: Data of IMF, *International Financial Statistics* and *IMF Survey*.

Note: The Systemic Transformation Facility (STF), created in 1993 on a temporary basis, assisted economies in transition with severe balance-of-payments problems arising from discontinuance of trade arrangements under planning. For members that had not yet had a standby arrangement, drawings could be made in 2 tranches in support of a written statement of policy reform intentions, the second 6-18 months after the first, assuming satisfactory progress towards an upper credit tranche arrangement (repayment terms are the same as for the Extended Fund Facility (EFF)).

See table A.19 for description of other facilities.

Table A.21.
NET ODA FROM MAJOR SOURCES, BY TYPE, 1979-1998

Donor group or country	Growth rate of ODA[a] (1997 prices and exchange rates) 1979-1988	1989-1998	ODA as percentage of GNP 1998	Total ODA (millions of dollars) 1998	Percentage distribution of ODA by type, 1998 Bilateral Grants[b]	Technical cooperation	Loans	Multilateral United Nations	IDA	Other
Total DAC countries	3.73	-0.92	0.24	51 888	62.4	25.1	5.3	8.2	8.0	16.1
Total EU	4.27	-0.15	0.33	27 462	62.8	24.2	-1.2	6.9	7.6	23.8
Austria	0.50	4.01	0.22	456	60.1	27.0	3.9	6.4	6.1	23.5
Belgium	0.05	-0.53	0.35	883	61.8	32.8	-1.1	3.6	5.4	30.1
Denmark	5.32	0.24	0.99	1 704	60.2	6.6	-0.7	17.7	4.8	18.0
Finland	17.40	-3.61	0.32	396	54.8	17.2	-2.0	19.7	2.5	25.0
France[c]	6.53	-1.09	0.40	5 742	79.1	36.2	-6.2	2.1	4.1	21.0
Germany	3.07	-0.52	0.26	5 581	59.4	35.6	3.2	6.1	6.1	25.2
Ireland	4.62	11.44	0.30	199	62.3	..	..	9.0	3.5	25.1
Italy	16.20	-6.90	0.20	2 278	27.4	1.8	3.2	7.6	21.5	40.3
Luxembourg	..	17.24	0.65	112	68.8	1.8	..	8.9	3.6	18.8
Netherlands	3.73	1.14	0.80	3 042	76.4	30.0	-6.2	8.2	7.4	14.3
Portugal	..	9.34	0.24	259	60.2	32.8	7.7	2.7	2.3	26.6
Spain	..	15.16	0.24	1 376	48.4	10.8	12.4	2.8	3.7	32.6
Sweden	1.68	-0.39	0.72	1 573	66.4	3.7	-0.3	13.5	7.9	12.5
United Kingdom	-1.79	1.10	0.27	3 864	60.2	18.8	-5.1	7.3	11.4	26.1
Australia	1.72	-0.15	0.27	960	78.3	37.9	..	9.3	5.4	7.1
Canada	2.52	-2.11	0.29	1 691	72.9	25.3	-1.5	8.5	7.8	12.3
Japan	7.49	0.44	0.28	10 640	46.1	17.1	34.3	5.9	6.6	7.1
New Zealand	-1.35	1.84	0.27	130	75.4	41.5	..	6.9	4.6	13.1
Norway	6.15	1.85	0.91	1 321	71.5	13.5	0.5	18.3	4.5	5.2
Switzerland	7.46	1.92	0.32	898	70.4	32.0	..	11.1	8.2	10.1
United States	0.80	-4.77	0.10	8 786	74.8	37.3	-6.7	13.0	11.8	7.1
Arab countries[d] *of which:*										
Saudi Arabia	..	..	..	288		42.7			66.4	
Kuwait	..	..	..	278		88.8			11.2	
Other developing countries[d]										
Korea, Republic of	..	..	..	183		68.3			31.7	
Taiwan Province of China			..	27		100.0			0.0	

Source: UN/DESA, based on OECD, *Development Co-operation*, 1999 report.

a Average annual rates of growth, calculated from average levels in 1977-1978, 1987-1988 and 1997-1998.
b Including technical cooperation.
c Excluding flows from France to the Overseas Departments, namely Guadeloupe, French Guiana, Martinique and Réunion.
d Bilateral ODA including all grants and loans; multilateral ODA including United Nations, IDA and "other", including technical cooperation.

Table A.22.
REGIONAL DISTRIBUTION OF ODA FROM MAJOR SOURCES, 1987-1998

Millions of dollars, two-year averages

Donor group or country	All developing countries		*of which:* Latin America		Africa		Western Asia		Southern and Eastern Asia[a]	
	1987-1988	1997-1998	1987-1988	1997-1998	1987-1988	1997-1998	1987-1988	1997-1998	1987-1988	1997-1998
Total ODA[b] (net)	43254.6	49107.2	4254.6	5522.8	16531.0	17599.3	3237.8	1639.0	12358.9	14847.4
DAC countries, bilateral	30411.5	33757.6	3380.5	3963.3	11335.5	11297.3	7929.0	850.7	8452.6	9883.3
Australia	578.7	763.6	0.9	0.8	43.4	49.2	0.9	1.2	502.1	637.8
Austria	159.6	298.9	6.2	23.8	91.9	85.7	20.6	14.8	6.8	70.1
Belgium	421.5	487.3	26.4	61.9	301.2	259.9	5.0	-2.8	37.8	31.8
Canada	1421.4	1234.9	169.8	141.0	439.6	309.4	11.2	5.8	387.6	257.7
Denmark	468.4	1012.1	14.5	72.9	279.6	439.1	9.7	3.4	119.0	209.3
Finland	321.2	204.5	20.0	13.2	192.8	72.0	3.8	7.4	55.1	58.0
France[c]	4107.1	4480.1	176.3	174.4	2372.8	2562.2	85.9	116.8	938.4	994.2
Germany	3131.1	3564.5	468.7	469.5	1217.8	1253.1	448.3	215.5	337.8	1040.3
Ireland	24.6	122.0	0.1	3.2	15.9	90.9	0.1	0.4	0.7	7.5
Italy	2142.9	575.6	221.3	78.3	1474.5	373.7	28.8	20.0	233.3	6.0
Japan	5778.3	7552.7	408.7	633.9	941.6	1034.1	312.3	244.8	3633.0	4448.0
Luxembourg	..	71.5	..	12.4	..	39.8	..	0.6	..	13.3
Netherlands	1485.4	2133.1	243.9	458.7	566.0	672.2	38.8	92.3	458.5	265.6
New Zealand	79.7	105.6	0.3	1.9	0.8	4.9	..	0.1	54.8	91.1
Norway	549.7	933.1	35.0	80.9	316.2	413.8	0.3	17.9	124.5	200.6
Portugal	46.2	169.8	..	0.9	..	161.6	..	1.4	..	-0.3
Spain	136.0	800.3	50.1	300.2	20.2	254.3	0.4	4.5	9.8	117.9
Sweden	836.3	1124.6	72.1	106.6	413.9	402.2	6.1	34.8	198.3	206.8
Switzerland	416.5	604.0	57.8	72.6	181.6	187.6	5.9	6.7	99.2	141.9
United Kingdom	1219.1	2055.3	71.8	247.3	517.3	746.6	8.9	25.8	342.2	529.2
United States	6959.5	5464.1	1336.5	1008.9	1878.0	1885.0	1333.7	39.6	914.0	556.4
DAC countries, multilateral	10487.6	14947.7	871.5	1534.0	4774.9	6106.2	248.2	616.4	3745.1	5006.2
Total DAC	40770.7	48705.3	4252.0	5497.3	16039.8	17403.5	2568.8	1467.1	12197.8	14889.5
Arab countries										
bilateral[d]	2355.5	401.9	2.6	25.5	420.5	195.8	685.7	171.9	161.3	-42.1
multilateral	59.0	-22.5	-3.1	-0.7	47.6	-6.4	23.0	-3.1	-16.2	-14.2

Source: UN/DESA calculations, based on OECD, *Geographical Distribution of Financial Flows to Aid Recipients*.

[a] Including Central Asian transition economies.
[b] Excluding assistance provided by centrally planned and transition economies, owing to measurement difficulties. Donor total includes amounts to certain European countries and unallocated amounts and hence is larger than the sum of the amounts per region.
[c] Excluding flows from France to the Overseas Departments, namely Guadeloupe, French Guiana, Martinique and Réunion.
[d] Approximately 35-40 per cent of Arab bilateral aid being geographically unallocated, depending on the year.

Table A.23.
RESOURCE COMMITMENTS OF MULTILATERAL DEVELOPMENT INSTITUTIONS, 1989-1999[a]

Millions of dollars

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Financial institutions	32337	34804	39820	39757	39709	40656	43516	44701	45760	57928	42417
African Development Bank	2842	3281	3454	2996	2519	1655	802	823	1880	1742	1237
Asian Development Bank	3686	4043	4843	5 095	5426	3864	5759	5878	9648	6208	5159
Caribbean Development Bank	73	109	111	71	71	56	110	99	54	122	137
European Bank for Reconstruction and Development			89	1188	2103	2232	2616	2774	2625	2658	2784
Inter-American Development Bank	2694	4005	5661	6232	6191	5298	7454	6951	6224	10403	9767
of which:											
Inter-American Investment Corporation	15	67	102	158	124	43	36	72	67	223	190
International Fund for Agricultural Development	277	323	281	331	383	364	414	447	430	443	434
World Bank Group	22765	23043	25381	23844	23016	27187	26361	27729	24899	36352	22899
International Bank for Reconstruction and Development	16251	15176	17021	15551	15098	16427	15950	15325	15098	24687	13789
International Development Association	4924	6300	7160	6310	5345	7282	5973	6490	5345	7325	5691
International Finance Corporation	1590	1567	1200	1983	2573	3478	4438	5914	4456	4340	3419
Operational agencies of the United Nations system	2542	2754	3628	3683	3363	3537	3931	3726	3453	4290	4198
United Nations Development Programme[b]	897	1042	1134	1027	1031	1036	1014	1231	1529	1764	1632
United Nations Population Fund	194	211	212	164	206	278	340	285	322	326	245
United Nations Children's Fund	498	545	947	917	623	810	1481	1133	521	962	891
World Food Programme	953	956	1335	1575	1503	1413	1096	1077	1081	1238	1430
Total commitments	34879	37558	43448	43440	43072	44193	47447	48427	49213	62218	46615
Memo item:											
Commitments in units of 1990 purchasing power[c]	38329	37558	43448	42175	44404	44639	43134	45686	49710	64810	49590

Source: Annual reports and information supplied by individual institutions.

a Loans, grants, technical assistance and equity participation, as appropriate; all data are on a calendar-year basis.
b Including United Nations Development Programme (UNDP)-administered funds.
c Total commitments deflated by the United Nations index of manufactured export prices in dollars of developed economies: 1990=100.

Table A.24.
EXTERNAL DEBT AND DEBT INDICATORS FOR ECONOMIES IN TRANSITION, 1989-1998

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	External debt (billions of dollars)									
Russian Federation/former Soviet Union[a]										
Total external debt	53.9	59.8	67.8	78.4	111.7	121.5	120.3	124.9	126.0	183.6
Long-term debt	35.7	48.0	55.2	65.2	103.4	111.6	110.0	112.8	120.0	165.2
Concessional	0.0	0.0	0.7	1.0	2.1	2.5	2.5	2.5	2.3	2.3
Bilateral	0.0	0.0	0.7	1.0	2.1	2.5	2.5	2.5	2.3	2.3
Multilateral	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Official non-concessional	2.1	5.9	8.8	10.8	54.6	64.5	64.3	72.9	74.2	85.3
Bilateral	1.9	5.5	8.4	9.3	50.8	58.8	52.7	57.6	55.7	59.4
Multilateral	0.2	0.4	0.4	0.5	1.3	1.5	2.0	2.8	5.3	6.6
IMF credit	0.0	0.0	0.0	1.0	2.5	4.2	9.6	12.5	13.2	19.3
Private creditors	33.7	42.1	45.6	53.4	46.7	44.6	43.2	37.4	43.5	77.6
of which:										
Bonds[b]	1.4	1.9	1.9	1.7	1.6	1.8	1.1	1.1	4.6	16.0
Commercial banks[b]	17.3	17.9	16.8	18.5	15.9	16.4	16.7	15.6	29.3	29.3
Short-term debt	18.2	11.8	12.6	13.1	8.3	9.9	10.4	12.1	6.1	18.4
Central and Eastern Europe										
Total external debt	102.1	109.2	117.6	113.0	116.7	121.5	138.3	139.9	140.9	156.3
Long-term debt	84.0	91.0	102.0	99.9	104.0	109.5	120.8	121.8	116.4	127.8
Concessional	4.8	5.2	4.9	14.3	13.6	12.1	13.6	12.8	10.5	11.5
Bilateral	4.7	5.1	4.7	14.2	13.4	11.9	13.3	12.5	10.1	11.0
Multilateral	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.4	0.5
Official non-concessional	31.3	36.5	47.6	38.6	39.6	42.0	42.2	40.0	37.0	36.5
Bilateral	24.5	28.7	34.7	24.3	24.9	25.1	26.9	25.9	23.5	23.5
Multilateral	5.7	6.6	7.9	8.9	9.3	11.1	12.3	11.9	11.0	10.6
IMF credit	1.1	1.3	5.0	5.4	5.4	5.7	3.1	2.2	2.5	2.4
Private creditors	47.8	49.3	49.5	47.0	50.9	55.5	64.9	68.9	69.0	79.8
of which:										
Bonds[b]	3.7	5.0	6.7	7.4	11.7	28.1	30.9	29.1	26.1	28.3
Commercial banks[b]	34.3	34.7	33.6	30.8	29.1	14.4	16.6	20.2	21.1	21.4
Short-term debt	18.1	18.2	15.7	13.1	12.7	12.0	17.5	18.1	24.5	28.5
Hungary										
Total external debt	20.4	21.3	22.6	22.0	24.4	28.3	31.6	27.2	24.5	28.6
Long-term debt	17.1	18.3	20.5	19.7	22.4	25.9	28.4	23.8	21.1	23.8
Concessional	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.4	0.5
Bilateral	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.4	0.5
Multilateral	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Official non-concessional	2.4	3.0	5.1	5.0	5.1	5.4	4.4	3.2	2.8	1.8
Bilateral	0.1	0.1	0.5	0.6	0.6	0.6	0.5	0.3	0.2	0.3
Multilateral	1.8	2.5	3.3	3.3	3.3	3.6	3.5	2.8	2.5	1.5
IMF credit	0.5	0.3	1.3	1.2	1.2	1.1	0.4	0.2	0.2	0.0
Private creditors	14.6	15.3	15.3	14.7	17.1	20.3	23.5	20.2	17.9	21.5
of which:										
Bonds[b]	3.4	4.7	6.0	6.8	10.1	13.5	15.8	13.1	10.6	12.0
Commercial banks[b]	10.2	9.6	8.1	6.4	5.2	4.0	3.4	1.9	1.3	1.5
Short-term debt	3.3	2.9	2.2	2.3	2.0	2.4	3.2	3.4	3.4	4.8
Poland										
Total external debt	43.1	49.4	53.4	48.5	45.2	42.6	44.3	43.5	40.4	47.7
Long-term debt	34.5	39.8	45.9	44.0	42.5	41.7	42.1	40.8	36.6	41.5
Concessional	3.5	3.8	3.7	13.0	12.6	10.8	11.1	10.1	7.7	7.9
Bilateral	3.5	3.8	3.7	13.0	12.6	10.8	11.1	10.1	7.7	7.9

Table A.24 (continued)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Multilateral	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Official non-concessional	20.1	24.6	31.0	20.7	20.6	21.6	21.1	20.4	18.9	19.2
Bilateral	19.6	23.6	29.3	18.7	18.4	18.3	19.1	18.2	16.8	17.0
Multilateral	0.5	0.5	0.9	1.2	1.5	2.0	2.1	2.2	2.1	2.2
IMF credit	0.0	0.5	0.9	0.8	0.7	1.3	0.0	0.0	0.0	0.0
Private creditors	10.9	11.3	11.1	10.3	9.4	9.3	9.9	10.3	10.0	14.4
of which:										
Bonds[b]	0.0	0.0	0.0	0.0	0.0	7.9	8.1	8.3	7.0	7.4
Commercial banks[b]	9.0	9.8	9.7	9.1	8.6	0.4	0.6	0.3	0.6	0.6
Short-term debt	8.6	9.6	7.6	4.5	2.7	0.8	2.2	2.7	3.8	6.2
	Debt indicators (percentage)									
Ratio of external debt to GNP										
Russian Federation/former Soviet Union	9.0	10.3	12.5	18.6	29.1	37.9	35.3	29.6	28.8	69.4
Central and Eastern Europe	34.2	38.8	65.1	58.2	50.9	47.3	43.5	41.7	44.4	44.2
of which:										
Bulgaria	48.0	57.1	119.6	116.2	114.7	102.3	81.3	106.5	101.3	83.0
Former Czechoslovakia	15.6	17.8	30.4	26.0	..	..	..	..	..	..
Czech Republic	..	..	..	..	29.9	27.2	32.2	35.9	45.0	45.5
Slovakia	..	..	..	..	28.4	34.8	33.3	32.6	46.3	49.0
Hungary	73.5	67.3	70.5	61.2	65.1	70.5	73.7	62.2	55.3	62.2
Poland	54.5	88.8	72.6	58.6	53.3	46.6	37.5	32.4	29.9	30.6
Romania	2.6	3.0	7.4	13.0	16.2	19.8	20.4	27.6	27.5	25.3
Ratio of external debt to exports										
Russian Federation/former Soviet Union[c]	72.6	73.8	124.8	143.0	169.8	156.7	129.5	119.3	121.4	207.1
Central and Eastern Europe	150.9	179.4	214.9	165.5	141.0	121.8	103.3	98.3	100.2	103.0
of which:										
Bulgaria	105.4	154.0	280.5	230.1	244.5	185.8	148.8	156.3	152.0	169.0
Former Czechoslovakia	46.6	56.1	75.2	42.4	..	..	..	..	..	..
Czech Republic	..	..	..	..	47.7	49.4	55.5	64.4	74.0	71.4
Slovakia	..	..	..	..	44.8	52.1	51.6	54.8	73.7	73.6
Hungary	169.8	172.8	180.5	158.2	213.4	247.1	176.0	133.3	94.5	106.6
Poland	261.5	251.4	286.4	249.6	246.0	159.3	115.9	107.7	94.4	100.5
Romania	9.4	17.4	42.2	63.8	73.7	75.6	70.2	87.4	93.3	96.7
Ratio of debt service to exports										
Russian Federation/former Soviet Union[c]	12.3	14.6	24.8	2.5	3.3	4.4	6.4	6.7	6.4	12.1
Central and Eastern Europe	22.5	20.9	19.5	16.8	11.7	14.4	13.6	13.5	14.1	15.9
of which:										
Bulgaria	26.8	19.4	6.6	8.7	6.5	13.0	16.5	19.4	14.4	22.1
Former Czechoslovakia	10.1	9.0	10.4	9.3	..	..	..	..	..	..
Czech Republic	..	..	..	..	7.2	11.5	8.2	8.4	14.2	15.2
Slovakia	..	..	..	..	8.5	9.2	11.5	12.1	11.4	15.9
Hungary	29.7	34.3	31.9	35.7	38.7	49.5	39.3	41.1	29.7	27.2
Poland	9.4	4.9	5.2	7.6	9.2	11.6	10.9	6.6	6.0	9.5
Romania	16.9	0.3	2.4	9.1	6.1	8.5	10.2	12.6	15.2	23.5

Source: United Nations, based on IMF and World Bank.

[a] In 1992, the Russian Federation assumed the debt of the former Soviet Union.
[b] Government or government-guaranteed debt only.
[c] Merchandise exports only.

Table A.25.
EXTERNAL DEBT OF NET-DEBTOR DEVELOPING COUNTRIES, 1989-1999

Billions of dollars

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999[a]
All countries[b]											
Total external debt	1184.7	1279.4	1344.4	1408.1	1510.8	1674.0	1830.2	1914.1	1925.6	2055.5	2068.1
Long-term debt	1020.1	1075.6	1118.1	1149.9	1216.9	1355.7	1447.4	1496.1	1521.3	1722.3	1744.4
Concessional	278.8	308.2	328.7	340.4	359.7	389.6	401.0	391.4	336.4	362.0	460.6
Bilateral	215.0	236.0	248.4	254.8	267.1	284.2	287.0	273.6	216.9	232.7	308.1
Multilateral[c]	63.8	72.3	80.3	85.6	92.6	105.4	114.0	117.8	119.5	129.3	152.5
Official, non-concessional	251.5	277.1	293.6	300.8	313.1	344.3	376.2	345.9	332.7	413.4	329.0
Bilateral	110.0	115.1	124.0	132.8	137.1	156.7	172.6	156.4	135.8	182.0	113.4
Multilateral	113.6	132.2	141.1	141.4	150.0	161.7	167.1	157.1	155.0	173.4	167.8
IMF	27.9	29.8	28.5	26.5	26.0	26.0	36.6	32.5	42.0	58.0	47.8
Private creditors	489.9	490.3	495.8	508.7	544.2	621.9	670.1	758.7	852.2	946.8	954.9
of which:											
Bonds[d]	43.5	102.2	108.8	119.9	147.7	204.5	224.1	261.7	275.8	394.0	302.0
Commercial banks[d]	283.3	207.9	201.1	189.2	170.7	133.2	136.7	134.3	144.8	165.8	165.5
Short-term debt	164.6	203.8	226.3	258.2	293.9	318.3	382.9	418.0	404.3	333.2	323.6
Memo items:											
Principal arrears on long-term debt	43.2	53.2	56.6	61.5	65.1	72.0	77.5	71.4	65.1	76.6	78.1
Interest arrears on long-term debt	29.3	39.7	41.9	38.0	39.0	35.9	35.3	29.1	24.9	28.5	28.7
Latin America											
Total external debt	452.8	475.5	492.6	509.2	548.1	587.7	651.8	676.1	679.0	751.2	792.7
Long-term debt	393.2	398.1	405.8	414.6	437.3	469.7	521.2	550.3	544.9	629.8	670.0
Concessional	45.7	48.6	51.8	53.7	55.9	58.5	60.2	57.8	31.7	31.3	32.3
Bilateral	40.0	42.5	45.3	46.8	48.7	50.7	51.7	48.8	21.9	21.1	21.1
Multilateral[c]	5.7	6.1	6.5	6.9	7.2	7.8	8.4	9.0	9.7	10.3	11.1
Official, non-concessional	100.2	116.3	124.1	126.9	129.0	133.2	158.1	138.3	116.1	131.1	165.1
Bilateral	37.7	43.6	50.2	56.2	56.2	57.7	66.4	52.2	36.6	36.7	65.7
Multilateral	46.9	54.6	56.8	55.9	59.0	62.1	65.4	62.7	61.4	72.9	79.1
IMF	15.6	18.1	17.1	14.8	13.9	13.4	26.2	23.4	18.1	21.5	20.3
Private creditors	247.3	233.2	229.8	234.1	252.4	278.1	302.9	354.2	397.1	467.4	472.6
of which:											
Bonds[d]	19.1	76.0	79.1	81.8	103.0	152.8	165.8	195.7	193.7	205.3	213.2
Commercial banks[d]	179.5	103.6	98.6	95.5	76.2	38.5	36.5	30.1	29.5	37.1	41.7
Short-term debt	59.6	77.4	86.9	94.5	110.8	117.9	130.7	125.8	134.2	121.5	122.6
Memo items:											
Principal arrears on long-term debt	18.2	24.6	24.3	24.1	20.7	20.4	16.5	8.1	8.0	8.3	8.3
Interest arrears on long-term debt	16.5	25.6	27.0	20.9	18.0	12.7	9.5	3.2	2.6	3.6	3.6
Africa											
Total external debt	275.5	288.8	291.1	287.5	290.1	315.6	335.2	330.1	315.4	324.6	..
Long-term debt	241.5	254.5	257.6	251.6	250.2	275.6	290.3	282.8	269.5	276.5	..
Concessional	77.1	84.9	91.8	95.8	100.8	110.6	119.2	125.2	122.8	130.4	..
Bilateral	51.8	56.6	60.1	62.2	64.2	68.8	72.0	76.1	73.0	76.4	..
Multilateral[c]	25.2	28.3	31.7	33.6	36.6	41.9	47.2	49.1	49.8	54.0	..
Official, non-concessional	79.8	81.4	84.1	82.5	81.1	91.5	97.2	90.1	82.7	84.5	..
Bilateral	51.8	50.6	51.7	50.5	47.8	55.3	60.7	55.4	52.0	53.3	..
Multilateral	21.4	24.6	26.6	27.0	28.2	30.4	31.3	29.2	26.1	26.9	..
IMF	6.6	6.1	5.7	5.0	5.0	5.8	5.2	5.4	4.5	4.3	..

Table A.25 (continued)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999[a]
Private creditors	84.7	88.3	81.8	73.2	68.4	73.4	73.9	67.6	64.0	61.7	..
of which:											
Bonds[d]	2.0	3.6	3.1	5.1	2.9	4.5	5.3	5.9	9.7	9.8	..
Commercial banks[d]	31.9	31.1	29.4	22.9	21.3	21.9	22.9	25.1	22.3	21.3	..
Short-term debt	34.0	34.2	33.5	35.9	39.9	40.0	44.9	47.3	45.9	48.1	..
Memo items:											
Principal arrears on long-term debt	19.8	21.8	22.0	25.8	31.9	35.4	41.6	41.0	39.0	43.4	..
Interest arrears on long-term debt	10.6	10.9	11.0	13.2	17.0	18.6	20.6	20.2	18.3	20.3	..
Sub-Saharan Africa											
Total external debt	123.8	140.0	145.9	149.5	153.7	162.5	172.1	170.6	165.6	171.1	175.7
Long-term debt	108.4	121.3	125.7	127.1	129.2	140.0	147.4	145.1	141.8	147.4	149.9
Concessional	50.0	58.4	63.1	66.3	69.8	77.9	82.2	84.6	84.6	90.5	94.2
Bilateral	29.0	33.0	34.5	35.8	36.7	38.4	39.8	40.3	39.9	42.3	42.7
Multilateral[c]	21.0	25.3	28.6	30.5	33.1	39.5	42.4	44.3	44.6	48.3	51.5
Official, non-concessional	33.7	37.4	37.3	36.7	35.3	37.2	39.5	36.6	33.0	33.6	33.0
Bilateral	20.0	22.8	22.9	22.8	21.7	24.7	25.8	24.8	22.6	23.1	22.9
Multilateral	9.3	10.5	10.9	10.8	10.9	11.2	11.1	10.0	8.8	8.7	8.1
IMF	4.4	4.1	3.5	3.0	2.7	1.3	2.5	1.9	1.6	1.8	2.0
Private creditors	24.7	25.6	25.3	24.1	24.1	24.9	25.7	23.8	24.3	23.3	22.8
of which:											
Bonds[d]	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.2	2.7	2.6	3.2
Commercial banks[d]	8.1	8.7	8.5	8.2	8.2	8.5	9.3	12.2	10.1	9.9	10.2
Short-term debt	15.4	18.7	20.2	22.4	24.5	22.5	24.8	25.5	23.8	23.7	25.8
Memo items:											
Principal arrears on long-term debt	12.8	15.5	19.8	22.8	26.8	28.3	32.1	30.2	27.3	29.7	30.3
Interest arrears on long-term debt	6.6	7.9	9.9	11.5	14.0	14.2	15.3	14.6	12.7	13.8	14.0
Asia											
Total external debt	456.4	515.2	560.6	611.5	672.6	770.8	843.1	907.9	931.2	972.2	..
Long-term debt	385.4	423.0	454.7	483.7	529.4	610.4	635.9	663.0	707.0	804.2	..
Concessional	156.0	174.8	185.1	191.0	203.0	220.5	221.6	208.5	181.4	204.1	..
Bilateral	123.2	136.9	142.9	145.8	154.2	164.8	163.2	148.8	121.9	139.6	..
Multilateral[c]	32.8	37.8	42.2	45.2	48.8	55.7	58.4	59.7	59.5	64.4	..
Official, non-concessional	71.5	79.5	85.4	91.4	103.0	119.6	121.0	117.6	134.5	154.7	..
Bilateral	20.5	20.8	22.1	26.0	33.1	43.6	45.5	48.7	47.2	42.3	..
Multilateral	45.3	53.1	57.7	58.6	62.9	69.2	70.4	65.1	67.4	79.3	..
IMF	5.7	5.6	5.7	6.8	7.0	6.7	5.1	3.8	19.9	33.1	..
Private creditors	157.9	168.8	184.2	201.4	223.4	270.4	293.3	336.9	391.0	445.5	..
of which:											
Bonds[d]	22.3	22.7	26.6	33.0	41.7	47.2	53.0	60.0	72.4	82.7	..
Commercial banks[d]	71.9	73.2	73.1	70.8	73.2	72.8	77.4	79.0	93.0	111.8	..
Short-term debt	71.0	92.1	106.0	127.8	143.1	160.3	207.2	244.9	224.3	167.9	..
Memo items:											
Principal arrears on long-term debt	5.3	6.9	10.3	11.6	12.5	16.3	19.3	22.3	18.1	24.9	..
Interest arrears on long-term debt	2.2	3.2	3.9	3.8	4.0	4.7	5.1	5.6	4.0	4.6	..

Table A.25 (continued)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999[a]
Least developed countries											
Total external debt	108.6	121.3	126.2	130.1	133.7	144.7	148.8	147.0	142.6	150.0	..
Long-term debt	97.7	108.3	111.7	114.0	117.2	126.9	130.8	130.0	125.7	132.1	..
Concessional	60.9	69.1	73.5	76.8	81.0	87.8	90.1	92.2	91.4	97.6	..
Bilateral	35.8	38.8	39.5	40.5	41.5	42.9	41.8	41.5	40.6	42.7	..
Multilateral[c]	25.1	30.4	34.0	36.3	39.5	44.9	48.3	50.7	50.8	54.9	..
Official, non-concessional	22.7	24.1	23.5	22.7	21.5	22.7	23.8	21.6	19.5	19.9	..
Bilateral	15.3	16.8	16.6	16.3	15.5	16.5	17.1	16.4	14.8	14.9	..
Multilateral	3.4	3.8	3.7	3.6	3.5	3.6	3.6	3.4	3.0	3.0	..
IMF	3.9	3.6	3.1	2.8	2.5	2.6	3.1	1.8	1.6	2.0	..
Private creditors	14.1	15.1	14.8	14.5	14.7	16.5	16.9	16.1	14.8	14.6	..
of which:											
Bonds[d]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	..
Commercial banks[d]	3.2	3.5	3.3	3.2	3.1	3.6	4.0	7.3	7.8	7.6	..
Short-term debt	10.9	12.9	14.5	16.1	16.4	17.7	18.0	17.0	16.9	18.0	..
Memo items:											
Principal arrears on long-term debt	12.0	15.2	18.8	21.8	25.5	29.4	33.1	31.6	29.3	31.7	..
Interest arrears on long-term debt	5.9	7.3	8.8	10.3	12.0	13.9	14.7	13.9	13.0	14.1	..

Source: United Nations, based on IMF, OECD and World Bank.

[a] Estimate.
[b] Debt of 122 economies, drawn primarily from the Debtor Reporting System of the World Bank (107 countries). For non-reporting countries, data are drawn from the Creditor Reporting System of OECD (15 economies), excluding, however, non-guaranteed bank debt of offshore financial centres, much of which is not the debt of the local economies.
[c] Including concessional facilities of IMF.
[d] Government or government-guaranteed debt only.

Table A.26.
DEBT INDICATORS AND DEBT-SERVICE PAYMENTS FOR NET-DEBTOR DEVELOPING COUNTRIES, 1989-1999

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999[a]
	Debt indicators (percentage)										
Ratio of external debt to GNP											
All countries	42.1	40.9	41.6	40.5	40.6	39.8	37.8	36.2	37.0	41.6	41.1
of which:											
Latin America	48.2	44.8	43.8	41.1	40.7	38.1	38.5	37.8	36.0	39.6	46.2
Africa	73.8	70.1	73.4	70.9	74.1	78.8	74.9	69.2	63.7	65.1	..
Asia	30.4	31.1	32.7	33.3	33.9	34.1	31.3	30.0	33.0	38.1	..
Memo items:											
Sub-Saharan Africa	90.1	97.6	102.6	115.6	124.0	148.6	138.0	124.8	118.8	120.5	119.7
Least developed countries	92.8	97.1	101.8	116.6	117.2	134.4	124.7	113.0	103.0	107.9	..
Ratio of external debt to exports											
All countries	197.1	184.4	183.6	176.4	175.5	168.3	150.8	142.8	132.7	149.7	136.5
of which:											
Latin America	268.8	250.2	254.2	242.0	240.7	221.7	205.8	194.7	177.4	195.3	194.6
Africa	245.5	217.1	222.0	215.1	215.9	243.8	220.5	198.9	185.8	211.3	..
Asia	142.5	139.0	137.6	134.7	134.8	128.4	113.2	109.8	103.6	116.5	..
Memo items:											
Sub-Saharan Africa	331.2	338.2	364.7	373.3	400.6	413.1	366.0	331.0	330.1	372.3	350.3
Least developed countries	487.1	426.2	481.1	488.3	504.9	505.6	425.1	390.5	359.2	421.5	..
Ratio of debt service to exports											
All countries	22.7	20.2	18.8	19.0	19.1	17.5	17.4	18.3	18.9	19.5	19.6
of which:											
Latin America	29.7	24.0	23.6	25.3	26.8	24.4	25.6	30.5	34.8	32.2	34.5
Africa	23.2	22.8	22.2	22.6	20.7	18.8	17.5	15.9	15.9	16.5	..
Asia	18.9	17.3	15.5	15.1	15.2	14.2	13.9	13.7	12.8	14.2	..
Memo items:											
Sub-Saharan Africa	19.4	18.2	18.0	15.7	15.0	17.5	20.2	16.2	16.1	18.3	13.0
Least developed countries	18.9	14.0	14.7	11.0	11.2	11.2	18.0	11.3	10.6	12.4	..

Table A.26 (continued)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999[a]
	Debt-service payments (billions of dollars)										
All countries											
Total debt service	136.5	140.1	137.8	151.7	164.6	174.1	211.0	245.5	274.9	267.5	295.6
Interest payments	63.6	61.9	63.5	62.7	63.1	69.9	88.9	93.2	96.2	102.0	110.8
of which:											
non-concessional	59.7	57.1	58.9	57.2	57.1	63.7	82.5	86.8	90.4	96.0	86.1
Latin America											
Total debt service	50.0	45.6	45.7	53.1	61.1	64.7	81.0	105.9	133.3	124.0	140.6
Interest payments	26.0	22.8	24.1	23.0	24.3	28.5	37.5	39.7	41.8	45.8	53.5
of which:											
non-concessional	25.5	21.9	23.3	22.1	23.5	27.6	36.6	38.9	41.0	44.9	45.4
Africa											
Total debt service	26.0	30.3	29.1	30.2	27.9	24.3	26.7	26.4	27.0	25.3	..
Interest payments	11.8	12.4	11.7	12.5	9.8	9.6	10.5	11.0	9.7	9.7	..
of which:											
non-concessional	11.0	11.3	10.9	11.1	8.4	8.2	9.0	9.3	8.2	8.0	..
Asia											
Total debt service	60.5	64.2	63.0	68.4	75.7	85.2	103.4	113.1	114.7	118.3	..
Interest payments	25.9	26.7	27.7	27.1	29.0	31.8	40.9	42.4	44.7	46.5	..
of which:											
non-concessional	23.2	23.9	24.6	23.9	25.2	27.9	36.8	38.7	41.1	43.1	..
Memo items:											
Sub-Saharan Africa											
Total debt service	7.2	7.5	7.2	6.3	5.7	6.9	9.5	8.3	8.1	8.4	6.5
Interest payments	3.0	3.1	3.2	2.7	2.4	2.7	3.1	3.3	3.1	3.1	3.1
of which:											
non-concessional	2.6	2.7	2.7	2.3	1.9	2.1	2.5	2.5	2.4	2.3	1.8
Least developed countries											
Total debt service	4.2	4.0	3.9	2.9	3.0	3.2	6.3	4.3	4.2	4.4	..
Interest payments	1.6	1.5	1.6	1.1	1.3	1.3	1.7	1.4	1.4	1.4	..
of which:											
non-concessional	1.1	1.0	1.1	0.7	0.7	0.6	1.1	0.8	0.9	0.8	..

Source: United Nations, based on data of IMF, OECD and World Bank.

[a] Preliminary estimate.