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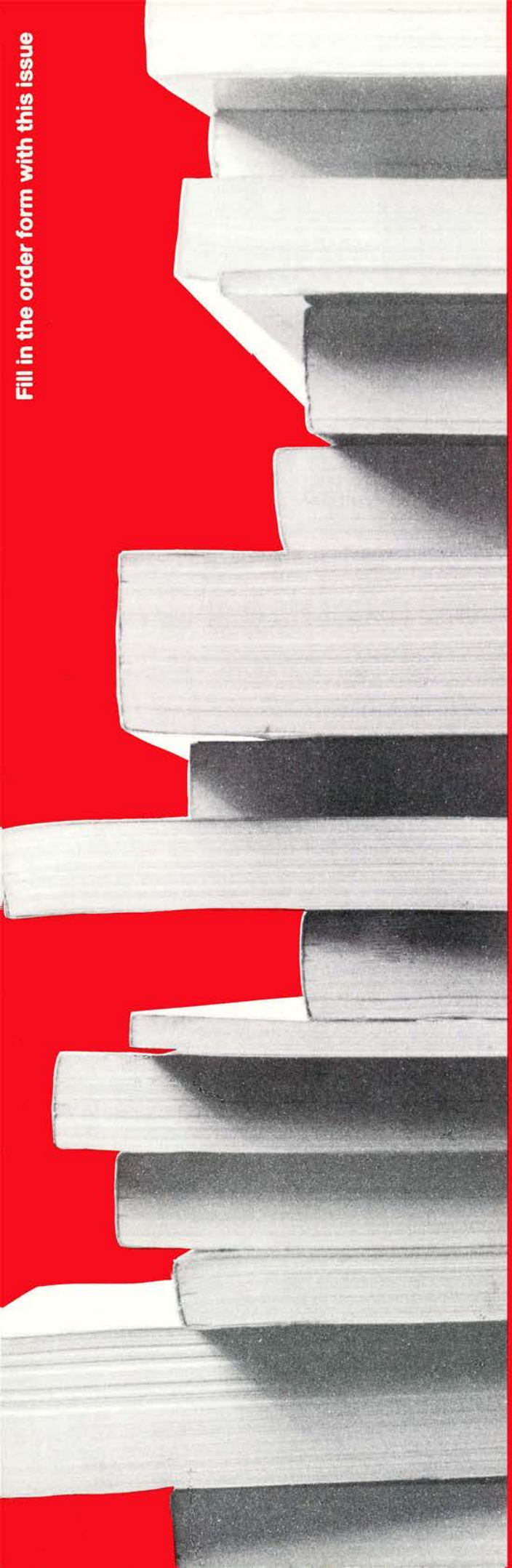

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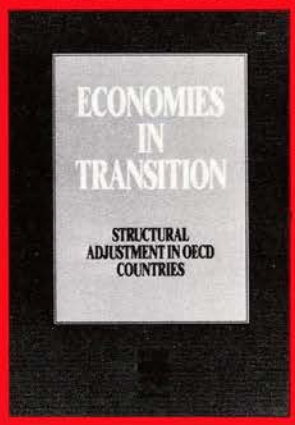

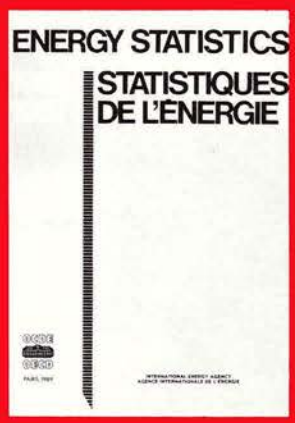

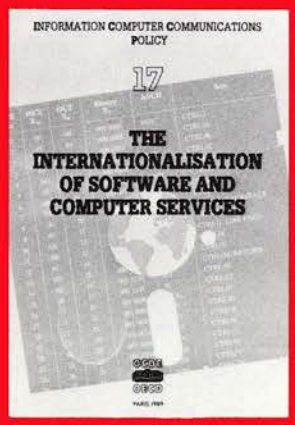

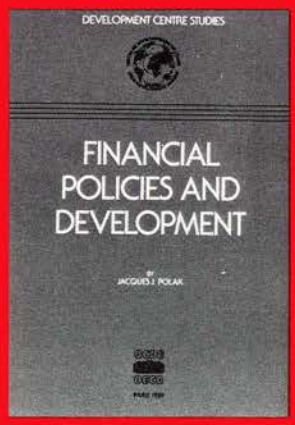

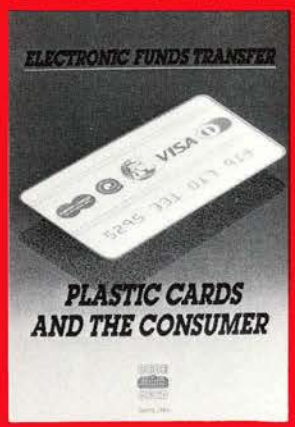

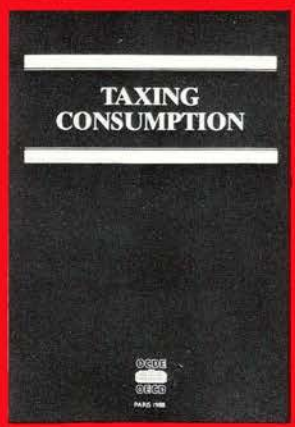

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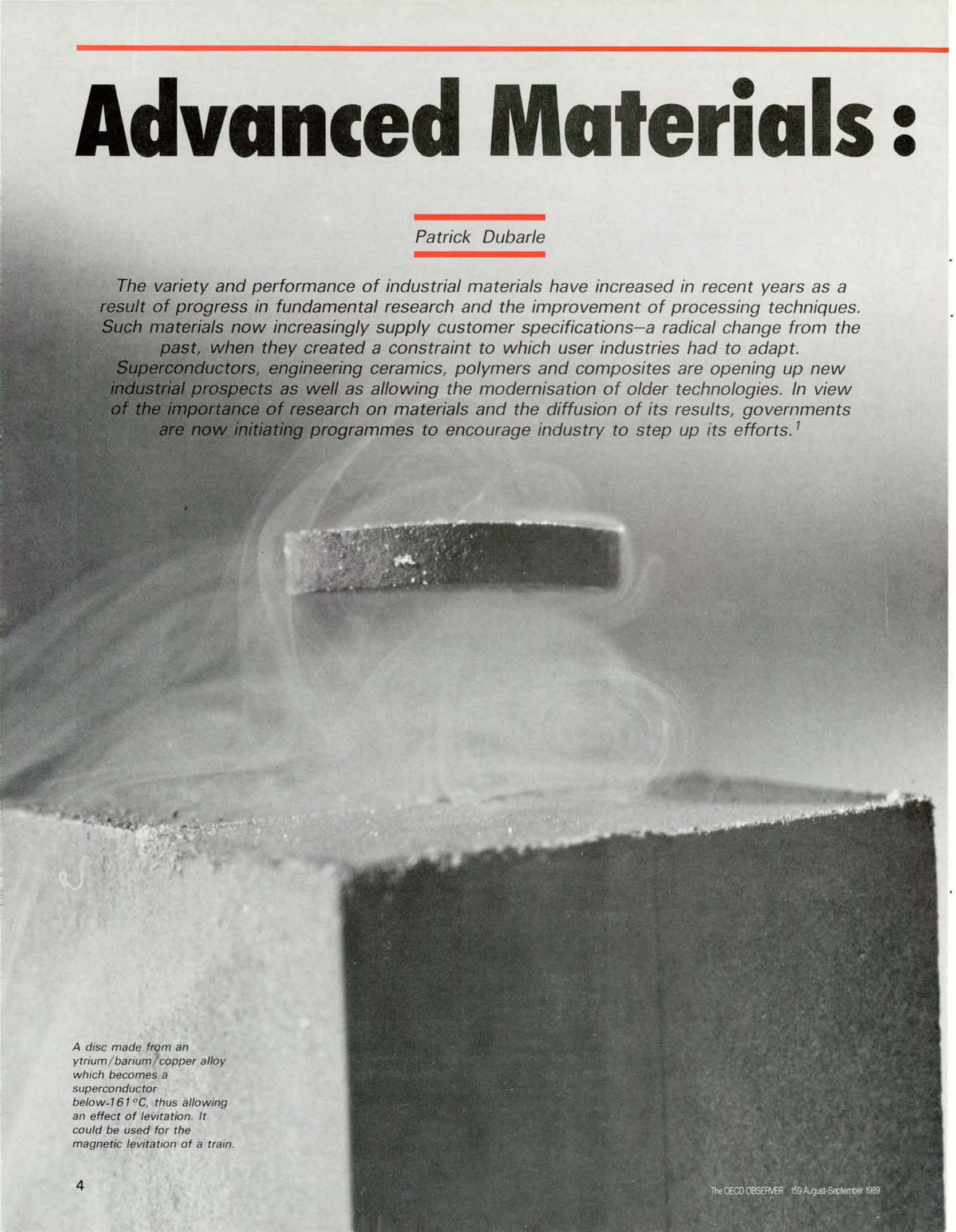
I.B.M.

An example of the revolution in advanced materials: this thin-film recording head–it is the size of the period at the end of this sentence–was made by evaporating an electrical conductor (the spiral) on a ceramic substrate; it is used to store and retrieve data on the magnetic disk of a computer.

Advanced Materials:

Patrick Dubarle

The variety and performance of industrial materials have increased in recent years as a result of progress in fundamental research and the improvement of processing techniques. Such materials now increasingly supply customer specifications—a radical change from the past, when they created a constraint to which user industries had to adapt. Superconductors, engineering ceramics, polymers and composites are opening up new industrial prospects as well as allowing the modernisation of older technologies. In view of the importance of research on materials and the diffusion of its results, governments are now initiating programmes to encourage industry to step up its efforts.[1]



A disc made from an ytrium/barium/copper alloy which becomes a superconductor below-161°C, thus allowing an effect of levitation. It could be used for the magnetic levitation of a train.

the Silent Revolution

For a long time the technological changes taking place in advanced materials were overlooked. They were of little interest to the media, and in any case were not recognised as such. These materials (box, p. 6) were seen simply as an offshoot of chemistry or metallurgy, or as ancillary technologies within the major nuclear, aerospace and electronics programmes. Moreover, the joint impact of the boom in information technologies, advances in biotechnology and achievements in aerospace kept them in the background. It was a silent revolution.

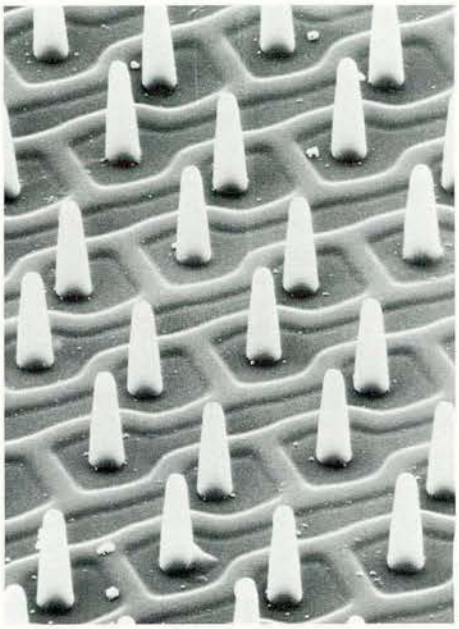
But in the last few years public administrations have become increasingly aware of the nature and importance of the vital role played by advanced materials in industrial economies. There are two reasons for this growing awareness.

First, advanced materials are creating vast markets with prospects for substantial growth (Table 1). In the United States, their sales amounted to almost $70 billion in 1985. In Japan, the Nomura Institute and MITI forecast strong growth on the domestic market, with $16 billion in sales in 1990 and $24 billion in the year 2000 as against $2.1 billion in 1981 (constant dollars). And the market for secondary products should increase by a factor of at least 8 by the end of the century.

Second, and more importantly, advanced materials, as an input in production, are having knock-on effects on many sectors of industry, often inducing technological changes.

Diffusion through Industry

Advances in the scientific understanding of microstructures and, more generally, solid-state physics and engineering have led to a marked increase in the varieties of materials available and the scope of their industrial applications. The relationships between the molecular structure of materials, their 'macro' properties (elasticity, strength, and so on) and the techniques by which they are processed are now much better understood than in the past. Manufacturers are therefore in a better position to meet consumer demand by developing tailored combinations of materials. Hence the rising consumption of 'advanced' materials, as they are known, in almost every manufacturing sector.



Siemens

A silicium superchip.

Structural materials—those with very good mechanical properties—are, for instance, being increasingly used in:

- the car industry, to replace metals by plastics and to lighten vehicles
- aerospace, where composites are now widely used and where the outlook for some alloys, such as aluminium-lithium, is promising
- housing, because of their insulation, anti-vibration or mechanical properties
- health care, where bio-materials (implants, artificial limbs, membranes) are becoming commonplace
- the sport and leisure industry (ski boots and golf clubs are only two examples).

Advanced materials can also play a more directly functional role when for a specific characteristic their standards of performance are very high or when they provide a range of useful properties (strength, resistance to chemical corrosion and heat, and so on). On that account they are the key to new technical systems: for example, silicon or gallium semi-conductors for electronic components, glass fibres for telecommunication cables, and rare earths for magnets or optical applications. Ceramics for combustion engines, however, are still in the preliminary phase.

From Materials to Manufacturing

One of the principal characteristics of advanced materials is their specificity. Every material is developed, treated and shaped with a view to incorporating it in a particular component or piece of equipment. It therefore forms part of a tailored system, involving the material and the process, as well as the product and the quality control and test methods. The processed material is thus inseparable from the processing procedures, since the same raw material treated in different ways may produce materials with different properties.

Accordingly, the term 'advanced materials' refers as much to a wide range of manufacturing processes as to the materials themselves. The variety of materials is therefore also reflected in the range of treatment techniques. ▶

Patrick Dubarle is the advanced materials and space specialist in the OECD Directorate for Science, Technology and Industry.

1. **Advanced Materials**, OECD Publications, Paris, forthcoming autumn 1989.

Pascal Nieto/R.E.A.

A few examples, among many others are:

- reactive or injection moulding, and stamping for plastics
- forging, magnetic forming and rapid solidification for metals
- powder metallurgy for ceramics
- the sol-gel method or molecular beam or chemical vapour deposition epitaxy for semi-conductors.

This variety of techniques has considerably expanded the opportunities for activities involving advanced materials. Manufacturers and authorities alike now fully realise that maintaining comparative advantage depends on improving technology in the associated equipment industries or even in the sectors producing measurement and test instruments.

Table 1
WORLD MARKET FOR ADVANCED MATERIALS[1]

	1986 billion Ecu	*Average Annual Growth in real terms (%) 1986–98*
New Iron and Steel Products	50	2.3
Engineering Thermoplastics	10	8.3
Engineering Duroplastics	15	5.5
New Metals and Non-ferrous Alloys	13	3.8
Composites	12	8.7
Structural Ceramics	7	13.9
New Glass-based Products	4	9.3
Functional Materials for Electronics	14	12.0
Total	125	6.4

1. The United States, Japan and the EEC aggregated. The United States accounts for 42.5% of total advanced materials production, the EEC for 30% and Japan for 27.5%.

Source: Observatoire des matériaux nouveaux, Bureau Interprofessionnel de Prévisions Economiques (BIPE), 1988.

WHAT ARE ADVANCED MATERIALS?

Advanced industrial materials, once they have been extracted, are the result of transforming primary materials by chemical processes and techniques of separation, combination and shaping. They are thus directly linked with the techniques by which they are treated.

With advanced materials these techniques are particularly important and often condition their properties. It is nonetheless difficult to categorise them even on this basis–techno-economic criteria are much easier to use.

These materials are distinguished from others by:

- relatively limited markets
- high unit prices
- growing markets for secondary applications.

A fairly clear dividing line can thus be drawn between advanced materials with specific properties and traditional materials that are more widely diffused.

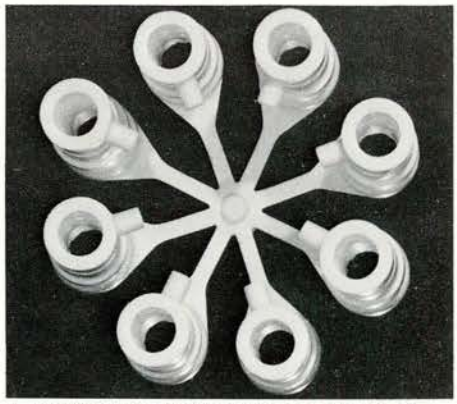
Advanced materials particularly comprise engineering ceramics and polymers, composites, semi-conductors, opto-electronic materials and amorphous alloys. The competition they have provided has prompted a renewal of activity in more conventional materials (special and super-alloys, and so on). Specialists therefore prefer to talk of 'advanced' rather than 'new' materials.

The synergy of manufacturers of materials and machinery has long been recognised in Japan. Overcoming the technological independence of producers of electronic chips and test equipment was therefore the main goal in the strategy defined by Japanese components manufacturers to catch up with their competitors in the United States. And the flourishing manufacturers of specialist equipment in Germany have long helped the plastics and even fine metallurgy industries to remain competitive.

Cost-Competitiveness

If the advanced materials/processes system is to achieve market success, it must compare favourably with conventional materials in their traditional applications or achieve profitability in new applications. Its advantages must therefore outweigh the disadvantages, including its price, which is almost invariably higher.[2] The replacement of conventional by advanced materials (box, p. 9), and the rate of that replacement, depend on the respective costs of use. Differences arise in:

- product manufacturing and shaping–here the determining costs are those of component design and assembly techniques, manufacturing costs caused by the rate of rejection (often slight with advanced materials) and costs of inspection and testing (generally higher for less well known materials)
- the operating phase–for example, the energy costs for the operation of equipment depend to a considerable extent on the weight of the materials used; maintenance, repair and even recovery costs at the end of the working life of the product are also an important factor.



Berenguier/Lerican

A polystyrene mould for the production of metal.

Berenguier/Jerrican

An alloy being poured into a mould.

Advanced materials often offer a marked cost advantage because of their specific characteristics. Composites (carbon/epoxy and carbon/carbon), for example, have made inroads in military aviation and aerospace in general because of their low density, strength and resistance to heat. The savings made in input management (composites allow complicated parts to be designed in one piece) have also contributed to their diffusion.

The main advantages of engineering polymers are lightness and resistance to corrosion, which have opened up markets for them in transport. Polymer blends (liquid crystals, for example) are increasingly used in industrial applications aimed at energy savings and opto-electronics. Engineering ceramics have made their mark in electronics (as component substrates), cutting tools and parts that are subject to wear.

In spite of these commercial successes, industrial investment in advanced materials involves substantial risks. There are several reasons. First, the market prospects for many families of materials are uncertain and the forecasting range is often extremely wide. G. B. Kenney and H. K. Bowen, for example, predict[3] that structural ceramic sales will total between $5 billion and $30 billion at the end of the century. Second, the immediate returns on R&D are low, since profits can be expected only in the long term. Research into metal matrix composites, for instance, started 25 years ago, but the first application—the use of

2. The cost of furnishing advanced materials is high and, in any case, well above that of traditional materials. In aerospace, for example, the price of light alloys (except those based on titanium) is around $5 per kilogramme, whereas it ranges between $30 and $150 per kg for multidimensional carbon/epoxy or glass/epoxy composites.

GLOSSARY

Amorphous Metals
Obtained by rapid solidification, these are metals in which the atomic structure is less regular than in a crystal.

Biomaterial or Biocompatible Material
A substance or matter suitable for use as an implant in a living organism to replace an organ or tissue.

Composites
Materials formed with two or more elementary components which, when combined, impart properties shown by none of the components taken separately.

Engineering Ceramics
Produced from synthetic substances for advanced technology applications in such activities as nuclear engineering, electronics and mechanical engineering. They show particularly good resistance to heat and wear, but their strength still has to be improved.

Engineering Polymers
Polymers with properties (mechanical, chemical, thermal, etc.) that can compete with those of metals. They are expensive—from $4 to $15 per kilo. Used in high-tech industries.

Epitaxy
A process used in the manufacture of semiconductor components for the orientation of crystals of one substance on a substrate of a different substance and made possible by the close similarities in atomic structures at their interface.

Extrusion
Forcing a semi-rigid solid material—a metal or plastic, for example—through an orifice to produce a continuous piece of the product in the desired form.

Forging
Shaping by plastic deformation of a metal or metal alloy.

Gallium Arsenide (AsGa)
A compound semiconductor material which, in certain applications, performs better than materials like silicon—but it has proved more difficult to use.

Injection Molding
Molding of pieces of metal, plastic or ceramic by injecting a specific quantity into a mold.

Liquid Crystals or Opto-electric Crystals
Materials in the mesomorphous state, i.e., midway between a solid and a liquid, used in electronic display systems.

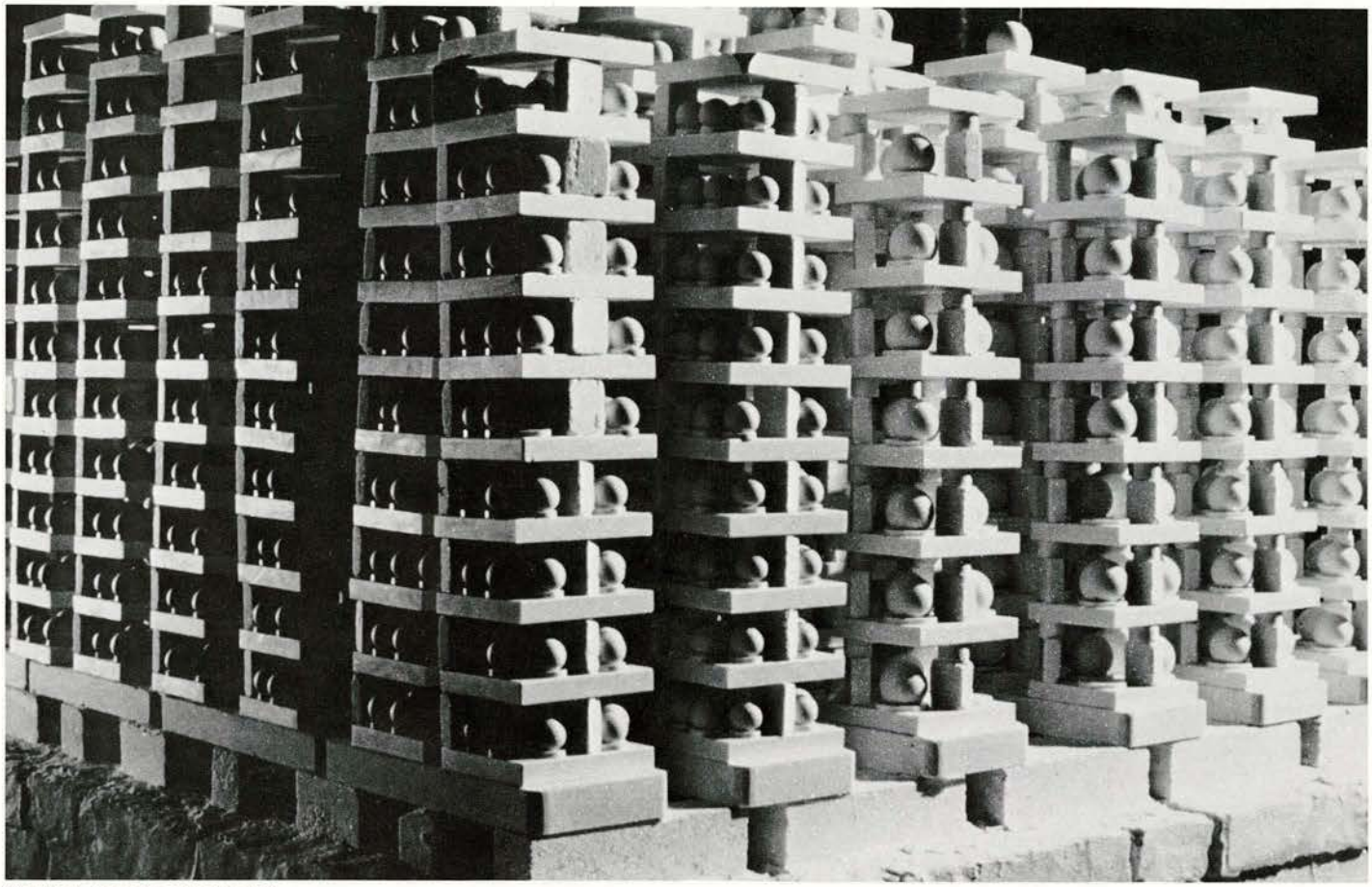
Magnetic Forming
Process for shaping or assembling conducting parts by using the action of magnetic forces between a shaping die and an inductor.

Powder Metallurgy
The production of pieces of metal by compressing metallic powder and heating it without fusion, to produce a dense and stable structure.

Sol-gel Method
A process to obtain ceramics and glass by mixing various components of the material in liquid form (colloidal solution). With this solution a polymeric structure is formed which, after heating at a moderate temperature, gives the final material.

Stamping
Shaping of a piece of metal by plastic deformation, using a tool known as a die to give it a particular shape and dimensions.

Superconductors
Materials (metals, alloys and chemical compounds) whose electrical resistance and permeability instantaneously fall below any measurable value at very low temperature. An electrical current can then pass through them without any dissipation of energy.



Michael Lange/Cosmos

Stacked ceramic components.

boron/aluminium composites on the space shuttle—was not made until the start of the 1980s.

Third, since little is known about how advanced materials will behave when they are in use, long and costly periods of testing and monitoring are required before they are put on the market.

These obstacles will not be removed without government initiatives, to promote innovation and encourage diffusion in industry.

What Government Action?

The idea of taking specific policy steps to accompany the development of advanced materials took time to catch on in most countries. In the United States the Federal government had long realised the value of strategically important materials—especially for military purposes. But it was not until the end of the 1970s that the contribution by advanced materials to the economic performance of the country and its impact on industrial competitiveness were recognised. At the same time the Japanese authorities confirmed the priority attached to these activities in their national technology strategy by launching a major programme. Europe was slower off the mark, and it was not until 1985 that the EEC set up the BRITE and EURAM projects.[4]

Almost all countries now have specific programmes, most of which aim to support R&D. These are ambitious, and are mainly multidisciplinary, involving many participants (public and private laboratories, universities, industrial research centres), fostering co-operation among a number of firms, sometimes from different countries. This emphasis on co-ordinated research, particularly between materials science and industrial engineering, reflects the strong bias towards fundamental research that is now prevailing in this sector.

The financial support provided by governments through these programmes mainly concerns a limited number of 'families' of materials, since governments tend to define priorities within the very wide range available. The choices made depend on the specific national features of industrial structure or research system and on how the authorities see the future. The degree of selectivity of the strategies adopted depends on the size of the country, its funding capacities and national attitudes to aid for research.

Yet in spite of the diversity of national approaches, they can be broken down, roughly, into four major groups:

- in the United States, a system with a large number of priorities and the use of instruments centred on university/industry and inter-industry co-operation and military procurement
- in Japan, more limited choices focussing on fine ceramics, carbon fibres, engineering plastics and amorphous alloys; the strategy is based mainly on the MITI programmes, public/private co-operation and technology transfers
- in the major European countries, medium selectivity in the choice of priorities and substantial financial

3. 'High-Tech Ceramics in Japan: Current and Future Markets', *American Ceramic Society Bulletin*, Vol. 62, No. 5, 1983.

4. BRITE: European Programme for Pre-commercial Research in Industrial Technologies, begun in 1985; EURAM: European Programme for Research in Advanced Materials, begun in 1986.

5. Although plastics make up only 7% of the weight of solid wastes in the United States, and much less in volume, they are rarely recycled (1%, compared with 30% for aluminium and 20% for paper). Other materials could be major sources of pollution in the future—for example, composites that are more and more frequently used in car manufacturing.

assistance in the pre-commercial research phase

- in other countries, concentration of resources on technological aspects and improving the standard of R&D.

□□

The strategies used for advanced materials have now reached a turning point, for the effectiveness of the programmes launched a few years ago is being assessed for the first time. Although there is no question of rescinding the support provided, it is likely that some adjustments will be made. Three aspects seem to be monopolising the attention of governments.

First, the availability of human resources and skills is considered inadequate. In most countries the authorities are thus reforming the education and vocational training systems so that researchers will be prepared and the public is made aware, at least, of the implications of advanced materials.

Pascal Sittler/R.E.A.

An artificial knee-joint using gore-tex.

The second major aspect involves standardisation, which is also underdeveloped. So far the action taken has been uneven and limited, and compares unfavourably with the other high-technology sectors. Much remains to be done, both nationally and internationally, for environmental protection, for example, and the control of various kinds of pollution.[5]

The last–but not the least important–consideration concerns international co-operation. Although materials activities lend themselves well to an international division of labour, and although the increase in the cost of innovation accompanying the improved industrial performance of countries adds to its importance, that co-operation has only recently begun. ■

SUBSTITUTION BETWEEN MATERIALS

Advanced materials can be used both to make new products and to replace conventional materials in traditional applications to take advantage of their superior performance and cost advantages. These substitutions are nonetheless limited in scope (Table). The use of advanced materials can require the complete re-organisation of production processes, with the result that businesses may hesitate to undertake the necessary investment if the advantages to be obtained aren't obvious. Moreover, improvements in the quality of traditional materials through appropriate treatment processes can erode the advantages. Overall, substitution has sometimes only a limited interest (because of specific properties of the materials involved) and, to maximise performance, firms often find it in their interest to use apparently competing materials in complementary applications.

Table
OLD AND NEW: PRODUCTION IN JAPAN

	1983 $ million[1]	*1990 Forecasts $ million*[2]	*Growth 1983–90 (%)*
Advanced Materials			
Fine Ceramics	1,670	6,315	19
New Polymers	1,800	4,210	13
(Engineering Plastics)	*1,100*	*2,736*	*14*
New Metals	710	2,315	18
(Amorphous Metals)[3]	*12*	*147*	*42*
Composites	105	631	29
(Carbon Fibres)	*63*	*160*	*14*
Total	4,285	13,471	18
Conventional Materials			
Steel	67,676	80,000	2
Non-ferrous	29,200	35,790	3
Ceramics	36,324	44,210	3
Chemicals	80,955	101,052	3
Textiles	33,945	40,000	2
Pulp and Paper	29,730	34,526	2
Total	277,830	335,578	3
Advanced materials as % of conventional materials	1.5	4.0	

1. $1 = Y 237.
2. 1983 dollars.
3. Based on total price of components.
Sources: Industrial Business Inc. (IBI), MITI (for the price of conventional materials).

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R&D Programmes for Information Technology

Georges Ferné

With all information technology—whether microelectronics, data processing, telecommunications or computer-integrated manufacturing—considerable economic rewards are at stake. Huge profits are to be gained from these highly competitive markets. The diffusion and application of information technology are speeding up relentlessly. So to prepare for the future, knowledge and expertise must be acquired. It is therefore hardly surprising that countries are launching ambitious research programmes, sometimes alone but more often in co-operation: research is expensive and the skills required are uncommon and dispersed.[1]

Countless national and international programmes aimed at mobilising researchers and engineers in all information technology activities were drawn up in the 1980s (Table). The 'Fifth Computer Generation' programme set up by Japan in 1981 was followed by about 20 other national programmes. In the United States, the Strategic Defense Initiative (SDI) and in Europe, the EUREKA programme, although not specifically concerned with information technology, include major sections referring to it.

This has led to a certain amount of confusion. By participating in several programmes, one 'actor' (firm, university, agency, etc.) can be involved in several different forms of co-operation, each involved with its own cluster of partners, which often overlap. For instance, a United Kingdom firm might well be simultaneously involved in the national Alvey programme, the European ESPRIT, RACE or EUREKA programmes and the United States SDI programme. Meanwhile, it may well have concluded bilateral agreements with other firms, whether European, American or Japanese. In each case, different procedures will be followed, to deal with such important fields as intellectual property.

The absence of common rules has serious implications, since the outcome of the co-operation—the exploitation of potentially crucial research findings—must be shared on an equitable basis. When the project is concluded, it must be possible to measure individual inputs and benefits: for instance, a line must be drawn between the knowledge and expertise initially supplied by each participant (the 'background') and the results of the shared work (the 'foreground').

This distinction becomes even more blurred when the partners are reluctant to disclose the extent of their skills in detail for the simple reason that they do not want to reveal too much to potential competitors. In Japan, firms taking part in R&D projects have been known to keep information about their background knowledge in sealed envelopes to be opened only in the event of disagreement over the allocation of results.

Research and Results

The procedures used for sharing out the results are of vital importance for determining the patent rights or potential licensing rights of each party concerned. The range of approaches used in different national and international programmes is therefore likely to lead to conflict.

Georges Ferné is a specialist in research and information technology policy in the OECD Directorate for Science, Technology and Industry.

Table
TECHNOLOGICAL OBJECTIVES OF SOME LARGE PROJECTS

Country	*Programme*	*Financing*	*Targets*	*Dates*
EEC	ESPRIT	50% EEC	Micro-electronics Software Advanced Information Processing CAD/CAM[1]	1984–94
	RACE	50% EEC	ISDN[2]	1987
Europe[3]	EUREKA	*ad hoc*	Robotics Telecommunications Micro-electronics	1985–
France	PAFE	Variable	Semi-conductors CAD/ISDN	1983–87
Germany	MP	40% government	Sensors Components	1985–89
Japan	ICOT	100% government	Artificial intelligence ISDN	1981–91
	INS	100% government	ISDN	1982–
	JUPITER	Variable	Robotics	1983–91
	SIGMA	100% government	Software	1985–
	VLSI	Government/industry	ISDN	1976–79
	SUPER-COMPUTER	100% government	Semi-conductors Software Architectures	1981–85
Netherlands	INSP	100% government	Office automation CAD/CAM Micro-electronics Telecommunications Software	1984–88
Norway	ACTION PLAN	Variable	General development	1987
Sweden	TI	Variable	General development	1987–
United Kingdom	ALVEY	50% government	Semi-conductors ISDN	1983–88
United States	ICAM	100% government	CAD/CAM	1977–85
	MCC	100% industry	Software ISDN/CAD Data-bases	1982–
	SCP	100% government	Semi-conductors	1985–93
	SDI	100% government	Artificial intelligence Software Sensors	1985
	SEMATECH	Government/industry	Semi-conductors	
	SRC	100% industry	Micro-electronics	1982

1. *Computer Assisted Design and Manufacturing.*
2. *Integrated Systems Data Network.*
3. *The EUREKA programme involves both EEC and other European countries.*

This is compounded by the fact that programmes are still evolving. At the start, most were part of a strategic plan for advanced research. Knowledge and research means were pooled among teams of researchers from private firms, university or public laboratories in order to acquire basic skills in a new technological field. The aim was to move ahead in a generic technology (micro-electronics, for example) without any specific commercial outlets in mind at the start. Research was 'pre-competitive'.

In the past four or five years, co-operation has been increasingly directed towards closely market-related results. The EUREKA programme is one example, as is the new stage in the Alvey programme. Consequently, the economic stakes are much more visible. And so are the difficulties in sharing out research findings.

Convergence and Differentiation

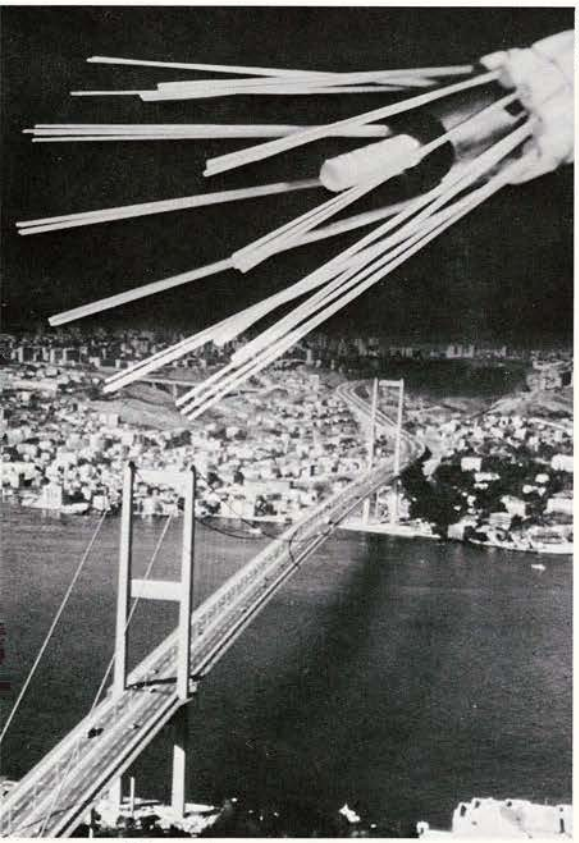
At first sight, many of the major research programmes in the information technology field seem to have very similar objectives. But this should come as no surprise. Their main lines are defined by the principal technology trends or 'technological landscape', in which each programme is attempting to find its place.

But in reality things are more complex. In the four main fields of information technology—micro-electronics, data processing, telecommunications, computer-integrated manufacturing—and from one programme to the next, there is indeed a common core: the importance of mastering a basic technology. Once that is acquired, different degrees of autonomy and specialisation can be exploited.

Micro-electronics

Micro-electronics is a good example of this duality. There are currently three main features common to all programmes: steadily smaller, and thus

1. **Major R&D programmes for Information Technologies**, OECD Publications, Paris, 1989.



Siemens

Fibre-optics.

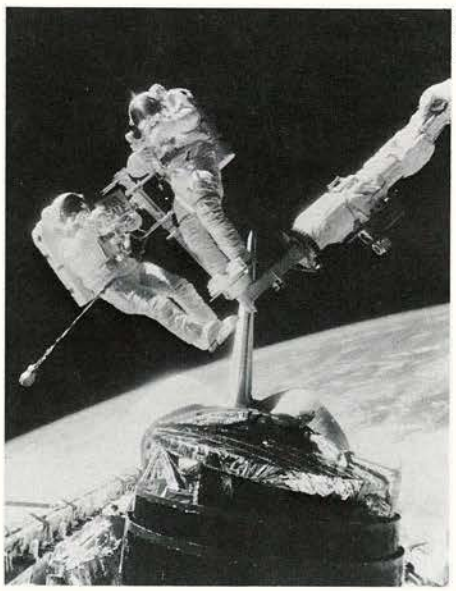
denser, chips—which, thirdly, are becoming less costly to buy but more expensive to manufacture since the capital investment required is constantly increasing. The targets, such as more advanced circuit integration, technological improvements in semiconductor design and fabrication and in silicon and gallium arsenide applications, remain unchanged although they may be affected by the means used to achieve them. The choice of technological strategies is therefore fully governed by the weight of techno-economic factors.

In this context, the different countries have a certain amount of lee-way on the type of product which they wish to develop. Japan has opted for the production and marketing of mass-manufactured standardised components for the consumer goods industry. The United States has entered the field of sophisticated components with special applications (weapons, space, etc.). On the other hand, the range of objectives aimed at under the ESPRIT programme—from micro-electronics to advanced data processing and knowledge (artificial intelligence)—suggest that it is still too early for such sophisticated choices to be made in Europe.

Data Processing

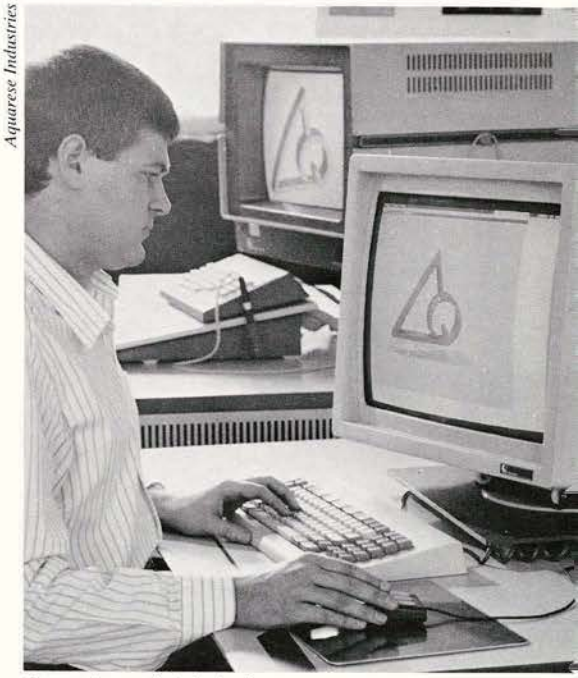
Organisation methods, rules and data-processing software are changing from one day to the next. Attempts are being made to increase overall computer performance by taking advantage of the improvements in unit components. Applications offered by artificial intelligence are also promising. As a result, potential data-processing applications are taking an entirely new turn with expert systems (intelligent machines), intelligent robots and speech recognition. Each of these must be mastered by anyone wishing to remain competitive in future, if only to be able to take full advantage of the diffusion of new products as soon as they come on the market.

Japan was the first country to enter these activities. Whereas the United States is forging ahead in defence (with the SDI programme), Europe is trying to cover artificial intelligence applications through the research projects connected with ESPRIT and EUREKA.



Sygma

Robotics.



Aquarese Industries

Computer-assisted design.

Telecommunications

The current tendency is for the digitisation of transmission systems and time-switching and the development of opto-electronics as a new transmission process. Whether in Japan's INS programme or the European RACE programme, the major objective seems to be the establishment of integrated services digital networks (ISDN) that will in future meet the requirements of all users (firms, services, administrations and consumers) by carrying sound images and texts at very high speed and very low cost.

Europe is making a special effort in this direction since its ambition to acquire and introduce new technology is set against the prospect of the Single Market in 1992. Alongside research it aims to develop standardisation and harmonisation procedures, which are

likely to pose difficult problems at the end of the current period of transition. Indeed, certain countries, such as Germany and France, have already launched the first stages in their ISDN networks.

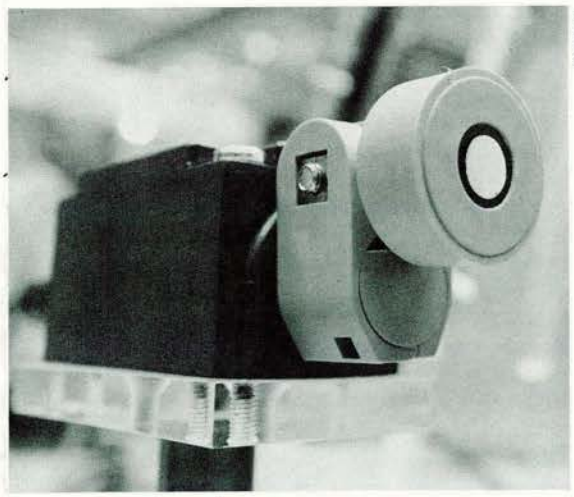
Computer-integrated Manufacturing

Automation and industrial computing are paving the way towards a two-fold change: a marked increase in production capacity, and a broader variety of products. They are based on numerical control machines, industrial robots, computer-assisted design and manufacturing systems and visual tactile recognition devices. In short, they are vital for the future of industry and structural adjustment of the economy.

The number of programmes using these technological developments reflects this trend: the Japanese JUPITER programme, the United States ICAM (Integrated Computer-Aided Manufacturing) under the Defense Department or the MAP project (launched by General Motors), the German programme *Fertigungstechnik*, completed in 1987, various subprojects under EUREKA, BRITE and ESPRIT, and so on. Most of these aim to improve the diffusion of new applications while developing a specific national asset. The technological lead of the United States and Japan is being matched by the European strategy of alliances and groupings with a view to preventing technological dependence. In most European countries (Germany, France and the United Kingdom in particular) research is being supplemented by programmes aimed at promoting the diffusion of the new technology.

Aérospatiale

The production of satellite antennae.



Siemens

Artificial intelligence.

The Old and the New

Information technology programmes are helping to finance and organise research and development but, as a rule, they are not confined to R&D. Most include sections on the diffusion and exploitation of results.

That the 'old' can hamper the dissemination of the 'new' in technological systems largely explains why this aspect is a cause for concern. In telecommunications, the co-existence of different generations of equipment presents acute difficulties in using them together, especially since the equipment has a long service life: by the year 2000, 50% of switches will still be electro-mechanical. In software, it is very difficult to make the computer 'architectures' of the 1960s and '70s compatible with those of today. In robotics, 90% of the systems now sold must be specially designed so that they can be used with equipment made 10 or 20 years ago.

An active policy of standardisation must therefore be pursued, especially as it largely concerns network technology. In telecommunications, therefore, programmes such as RACE focus heavily on this aspect.

□□

The co-existence of old and new raises problems of staff training and patterns, thinking and behaviour. Over and above the training of skilled personnel—obviously a vital element in future progress—society as a whole must be prepared to meet the challenges and constraints of an increasingly computerised civilisation by closing the gaps that would create further obstacles, by enabling each person to take advantage of new possibilities at work and at home as well as in his or her leisure pursuits and by making sure that the price paid for the inevitable adjustments does not penalise some groups more than others. ■

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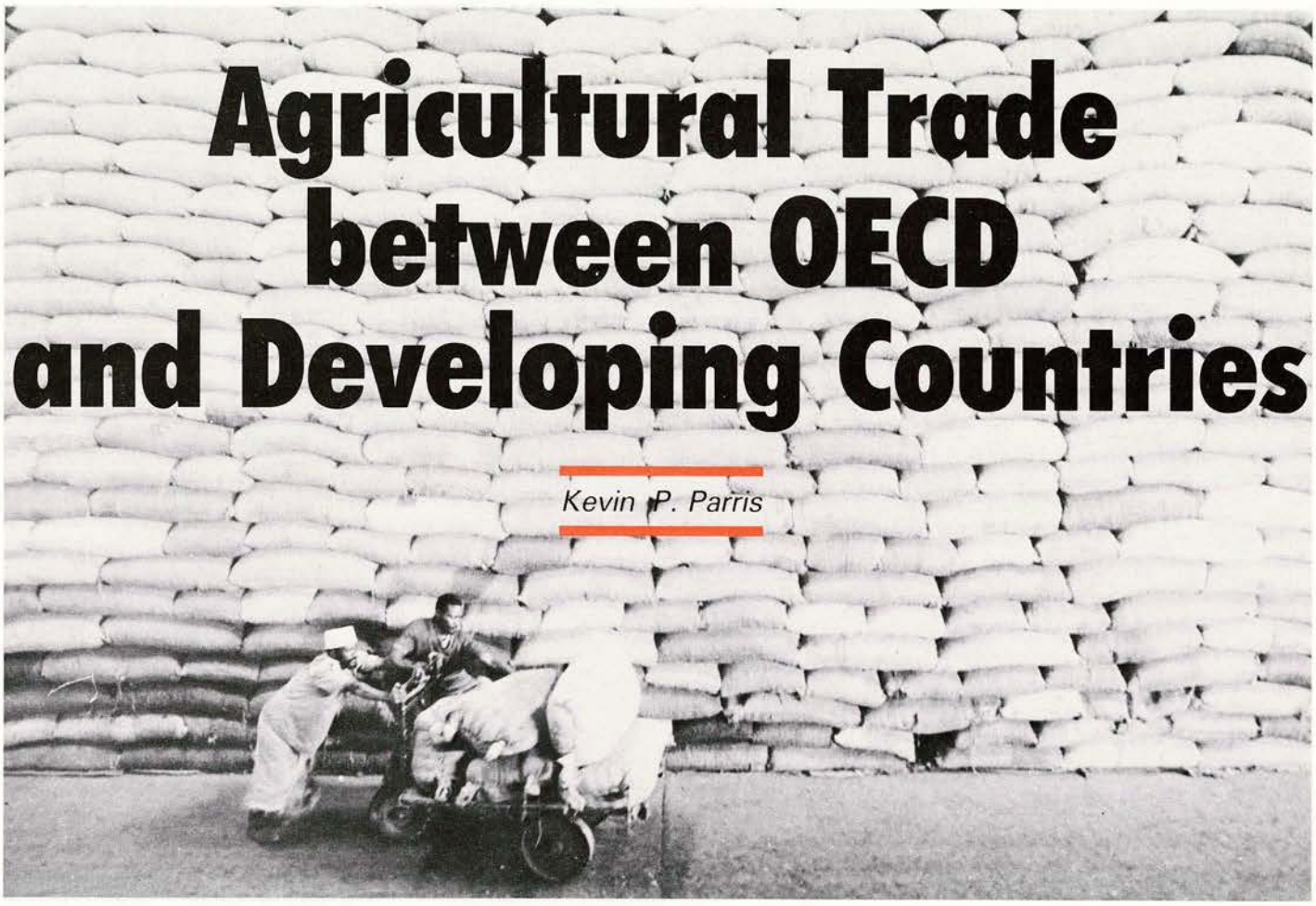
Agricultural Trade between OECD and Developing Countries

Kevin P. Parris



Laffont/Sygma

The Uruguay Round of multilateral trade negotiations has recognised the growing importance of the agricultural trade relations between OECD and developing countries. So, too, have OECD Council meetings at ministerial level, when Ministers have emphasised that they would do everything possible to open markets for the exports of developing countries, and maintain—and, as far as possible, increase—official development aid and other financial flows. In turn, developing countries have important responsibilities in improving their own performance and policies, improving their credit-worthiness, creating an attractive climate for investment and further liberalising markets.

Agricultural exports from the OECD area to developing countries account at present for nearly 40% of the OECD total of such products. Indeed, the Asian newly industrialising economies (NIEs), North Africa and Western Asia are the fastest growing markets anywhere in the world for these exports.

The goods involved (approximately 70% of the total export value of OECD agricultural commodities) are principally cereals, processed dairy products, natural fibres, processed foods, beer and wine. The composition of this trade has been changing during the 1980s, with declining shares of cereals, sugar, vegetable oils and fats, and increasing shares for oilseeds, fruit and vegetables, animal feeds, meat and dairy and other products. These changes largely reflect the impact of rising per capita incomes in the importing countries, stimulating increased demand particularly for livestock products, fruit and vegetables.

The growth in the volume and value of OECD agricultural exports to developing countries was higher in 1988 than the average for the first half of the decade, although the short-term outlook in 1989 and 1990 is for a lower rate of growth. Up to the mid-1990s, it is encouraging for some exporters, notably those trading crop rather than livestock products.

The developing countries have seen their share in OECD agricultural imports decline during the 1980s, although it still accounts for 45% of the total. (Japan has been a notable exception to this overall trend, with a particular expansion in imports from South East Asia.) There have been marked changes during the 1980s: a sharp increase in the value share of fruit and vegetables and animal feeds, and a smaller one for meat and some natural

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fibres; and a substantial reduction in the share of sugar, with a less marked decline in cereals, oilseeds, oils and fats, and many tropical agricultural products, not least coffee, cocoa and tea.

What Prospects for Trade and Aid?

The medium-term prospects for developing countries to expand their agricultural exports to OECD countries are not encouraging. The price elasticity of demand for tropical beverages and foodstuffs such as coffee, tea and cocoa is extremely low: that is, a reduction in price will not do much to encourage additional consumption which is near saturation in many OECD countries. And when OECD manufacturers reduce the share of raw materials–say, rubber–in each unit of their production, that reduction in demand is felt in poorer countries.

This somewhat pessimistic outlook could be partly offset if OECD economies experience more rapid growth. But even if they do, the current domestic agricultural and trade policies of most OECD countries are an impediment, if they remained unchanged, to the future expansion of the exports of developing countries, especially in highly processed forms (refined vegetable oils, for example, commonly attract high tariffs, compared with zero-tariff ratings for vegetable oilseeds).

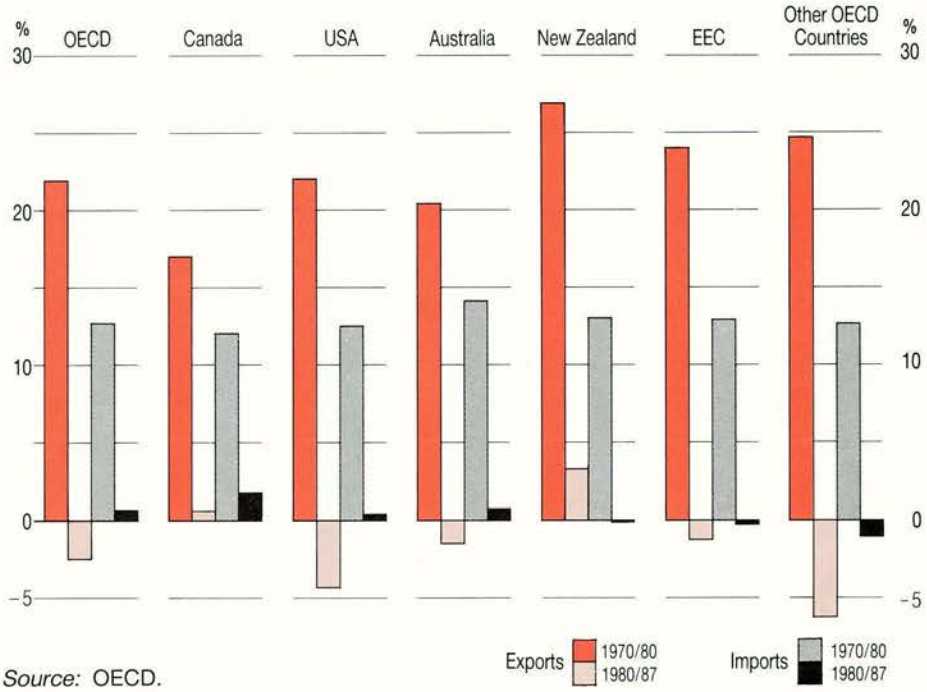
The outlook for trade and food aid is related to a multitude of factors, four of them of especial importance:

- deteriorating supplies of food in some food-importing developing countries
- the underlying weakness of world prices for primary commodities
- the diversity of economic growth, debt and trade prospects among developing countries
- the liberalisation–or otherwise–of trade policy.

Security in the supply of food in developing countries has a particularly important bearing on OECD policy on food aid. Food security remains extremely precarious, especially for low-income developing countries running 'food deficits' (Table 1). This is not least because of the large rise in international food prices in 1988, the sharp reduction in the ratio of world stocks of cereals to consumption, and the lower volumes of food aid being shipped from the principal donors (Table 2). In addition, the economies of the poorest countries are generally extremely weak, and are frequently troubled by drought and war, raising serious doubts about their ability to import food at prevailing world prices in the event of any deterioration in their food supplies.

Although in the past decade the number of people suffering from undernutrition has been in decline as a proportion of the total population in developing countries, some countries have been less fortunate. Pockets and periods of acute famine still occur–Angola, Ethiopia, Mozambique and Sudan are recent examples–and require urgent policy responses, both at home and abroad. The developing countries must give the highest priority to improving their agricultural production. But that will require international support, and in the meantime OECD countries should provide reliable supplies of food and development aid, both to cope with the immediate demands of the poor and support a long-term programme.

Figure
OECD AGRICULTURAL TRADE WITH DEVELOPING COUNTRIES
annual growth rates (%) of total value of trade



Source: OECD.

The False Dawn of the Price Boom

Variations in the international prices of primary commodities play a significant role in determining the economic performance–and consequently the agricultural trade balance–of the many

Table 1
FOOD PRODUCTION OF LOW-INCOME FOOD-DEFICIT COUNTRIES[1]

	1984/85	*1985/86*	*1986/87*	*1987/88 estimate*	*1988/89*[2] *forecast*
(million tonnes)					
Roots and tubers	290	284	274	282	284
Pulses	25	25	27	23	25
Cereals	690	679	699	689	717
Per capita cereal production (kg)	255	246	249	241	246
World cereal stocks as % of world cereal consumption	*21*	*25*	*26*	*23*	*16*

1. Low-income food-deficit countries defined as net food importers with per capita incomes below US$835 (1986).
2. Data refer to July/June year.
Source: *Food Outlook*, No. 1, Food and Agriculture Organisation, Rome, February 1989.

developing countries which are highly dependent on their production and trade. There was a substantial boom in the nominal prices (in dollars) of world agricultural commodities in 1988, rising by 13% after declining by 21% in 1987. But that 'price boom' was a false dawn: measured in constant terms (adjusted for inflation and variations in exchange rates), prices did increase in 1988, providing some relief to exporters dependent on commodities, but they are still 22% lower than at the trough of the 1981–82 recession. And forecasts for 1989 and 1990 show agricultural commodity prices rising at less than 2% per annum. The underlying weakness of agricultural commodity prices reflect principally the slow growth in import demand in the major importing countries and for many commodities, notably cereals, the continued growth in agricultural supply in excess of the expansion in demand.

On a year-to-year basis, moreover, because of the usually large movements in the prices of different commodities, the distribution of gains and losses varies widely among various groups of developing countries. The small sub-Saharan African exporters of tropical food and drink products (Ethiopia and Ghana, for example), which are net food importers, benefitted initially in 1988 from the increase in the prices for their exports but suffered from the rise in prices they had to pay for food. Similarly, the oil exporters, such as Saudi Arabia and Nigeria, which rely heavily on food imports, were affected in 1988 by the drop in oil prices coupled with the rise in food prices. The Latin American non-oil food exporters, including Argentina and Brazil, on the other hand, benefitted from both the rise in food prices and the reduction in oil prices.

For most primary commodities, but especially agricultural products, medium-term projections indicate that deflated current US dollar prices, deflated to allow comparison, would by 1995 be 40% below their 1980 rates. Thus, unless developing-country exporters can significantly expand the volume of their exports in the medium term, their ability to improve their economic performance and expand imports, including agricultural imports from OECD countries, will be seriously undermined. Although their share of world agricultural exports, measured by its value, has been rising over the 1980s, it has been in decline for imports. And the short-term outlook for 1990 suggests that the growth in value and volume of these exports will be lower than in 1987–88 but considerably above the growth rate achieved during the first half of the decade. Even so, prospects for imports are not encouraging, especially because of higher food prices in 1988–89 and the sharp reduction in oil prices.

Diversity of Economic Performance

For the oil-exporting countries in North Africa and the Middle East, including Algeria, Libya and Saudi Arabia, the slow rise in oil prices forecast over the medium term, their rapidly increasing populations and weak growth in their agricultural sectors will lead to an ever larger food deficit and thus a continued high growth in imports–not least from the OECD area–to cover the shortfall. Moreover, the sustained rapid increase in disposable incomes forecast for the Asian

Table 2
FOOD AID TO LOW-INCOME FOOD-DEFICIT COUNTRIES[1]

	1984/85	*1985/86*	*1986/87*	*1987/88 estimate*	*1988/89*[2] *forecast*
Total cereal imports	47	42	48	55	57
of which food aid (million tonnes)[2]	10.8	9.6	10.6	10.6	8.1
% of total cereal imports covered by food aid	*23*	*23*	*22*	*19*	*14*
Total dairy food aid (thousand tonnes)	350	257	213	n.a.	n.a.
as a % share of dairy food aid donated to all developing countries	*76*	*60*	*49*	*n.a.*	*n.a.*

1. Calendar year of the first year shown.
2. July/June year.
Sources: OECD; *Food Aid in Figures, 1987*, No. 5, Food and Agriculture Organisation, Rome, 1988.

Salgado Junior

Developing countries absorb nearly 40% of the agricultural exports of OECD countries.

NIEs bodes well for OECD exporters. But this pattern is in sharp contrast to the countries of sub-Saharan Africa, whose enfeebled economies are not expected to show any marked signs of recovery.

Medium-term prospects for the principal agricultural exporting countries in Latin America will depend crucially on the resolution of their debt difficulties and the response of domestic agricultural policies to macro-economic and trade reform. Opportunities for the agricultural NIEs in South East Asia—Indonesia, Malaysia, the Philippines and Thailand—to expand their exports will depend in particular on their volume, on variations in international prices for primary commodities, and on access to OECD markets.

Liberalising Agricultural Trade

The developing countries view the agricultural trade policies of many OECD countries as harmful both because they use protectionist barriers to exclude competition and because they destabilise world agricultural markets through export subsidies. Many developing exporters have expressed their concern about the adverse effects of export subsidies, although the importers, not surprisingly, are more cautious and propose that reforms in this area should not lead to increased prices for food.

Progress was made in the mid-term review of the Uruguay Round in December 1988, in Montreal, before the adjournment of this session, with the agreement to liberalise trade in tropical products. Furthermore, the conclusion of the mid-term review, in Geneva in April 1989, led to an agreement endorsed by participating countries on a framework for liberalising agricultural trade which, *inter alia*, recognised that 'a special and differential treatment to developing countries is an integral element of the negotiations particularly on the strengthened and more operationally effective GATT rules and disciplines'. ▶

Tomas Sennett/IDA

The price-elasticity of tropical beverages and foodstuffs, like coffee, cocoa and tea, is extremely low.

During the past few years most developing countries have, for their part, implemented new measures (or improved earlier ones) to liberalise their trade sectors and these reforms have usually been followed by domestic macro-economic adjustment. The changes are frequently required by the IMF as part of a programme of loans for structural adjustment, including changes in exchange-rate policies to help correct external trade imbalance.

The incidence of protectionism in developing countries, both through tariffs and non-tariff barriers, tends to be considerably higher than in OECD countries. This is particularly true of food products, which are, moreover, usually one of the most heavily protected categories of products, after manufactured goods, in developing countries, although the degree of protection for food products differs substantially when compared on a sub-regional basis. In the oil-producing countries of North Africa and the Middle East protection for food products is among the lowest in developing countries, with sub-Saharan Africa, South and East Asia occupying an intermediary position; protection tends to be highest in Latin America.

The growth of agricultural trade is also being affected by the removal of taxes and other restrictions on exports and the movement away from fixed and multiple exchange-rate systems to floating regimes, leading in many instances to the sharp devaluation in national currencies. The most striking examples of such policy changes are the structural-adjustment programmes in Argentina and Brazil, the so-called 'Austral' and 'Cruzado' plans. For agriculture these plans have involved the reduction of export taxes, elimination of support to agricultural producers, removal of food subsidies for consumers, the devaluation of the exchange rate and the gradual liberalisation of the economy.

□□

There can be little disagreement that an improvement in agricultural trade relations between OECD and developing countries depends on a combination of growth-oriented policies in developing countries, an easing of their debt problems and a supportive international environment, including increased flows of aid and the further liberalisation of international trade. It is clear that in development, debt and trade alike, more must be done not only by OECD countries but also by the developing countries themselves. ■

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The Patent Paradox in Competition Policy

Bernard J. Phillips

The competition policy aspects of licensing patents and know-how are the focus of a new OECD report.[1] It examines the pro- and anti-competitive effects of restrictive clauses in such licensing agreements and provides a method for their evaluation.

'Consider the typical barnyard sow. She's fat, she eats too much, and under the best of circumstances she might only produce 12 piglets a year. Now, imagine that a biotech company tinkers with her genes and produces a line of leaner, more fertile pigs that gives the farmer a bigger ham for the buck.'[2]

It may not seem obvious that competition policy can affect whether a scientist and a farmer can make a deal and the consumer, ultimately, benefit. But it is competition policy that regulates the clauses permissible in contracts involving licenses, patents and expertise, and the pig in the quote is likely to be protected from imitators, if not the slaughterhouse, by a patent. This assumes both that genetically engineered animals are patentable (or otherwise protectable under intellectual property laws) and that the protection runs to offspring exhibiting the novel characteristic. In fact, intellectual property protection in this new area is not uniformly established across OECD countries but does exist in the United States (box, p. 20). There, however, debate continues over the patented status of offspring.

So how can competition policy affect co-operation between scientists and pig farmers? In this example, the firm (say, Biotech Inc.,) may have problems in creating a contract with the farmer which will permit it to capture the value of its invention. One obstacle could be that Biotech (the licensor of the patent) could fear that others might copy its invention: if it sells patented piglets to Farmer Brown with the idea that Brown breed and raise them and sell them to a slaughterhouse, it won't want some of the piglets running off to other farmers who then will also profit from the firm's invention without paying for the privilege. It may therefore want to insert a clause in the licensing contract with Brown, either limiting him to a particular 'field of use' of the patented pig (raising pigs for slaughter) or prohibiting him from doing business with certain customers (other farmers).

Competition policy authorities would probably not see any difficulty with a license that limited Brown to one field of use, but they could find other complications. Suppose, for example, that there were not one but two biotechnology companies, each with a patented pig. If these two firms agreed not to compete, competition authorities in most OECD countries would find the resulting cartel unlawful. For example, the firms might agree to sell their pigs in geographically separate markets, to different farmers or, conceivably, for different fields of use. The distinction which alters the analysis is that the agreement between the biotechnology firms is between 'horizontal' competitors while the Biotech-Brown agreement is 'vertical', i.e., between suppliers and consumers.

In this porcine example competition policy has not so far prevented Biotech and Brown from making a deal. But other competition policy rules in intellectual property licensing could indeed cause problems.

From Competition to Coercion?

What if the new genes of the patented pig do not exhibit themselves in all offspring, so that some of the offspring will be just plain old pigs? The biotechnology firm and the farmer both know roughly how many of each type to expect but will not be able to identify the genes of a particular pig without costly testing. To solve this problem, the firm would probably want to impose a royalty on the total output of Brown's farm, covering both patented and unpatented pigs.

But royalties on total output can run foul of competition law. Charging a royalty fee on an unpatented pig can be seen as an unlawful attempt to 'extend the patent monopoly' to, in this case, ordinary pigs. While some competition laws will permit such a clause, others will not, or will make the legality of the clause a matter of gamesmanship between the biotech firm and Farmer Brown (or their lawyers). Some com-

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1. **Competition Policy and Intellectual Property Rights**, OECD Publications, Paris, 1989.

2. 'Genetically Altered Livestock: Who Owns Their Offspring?', *The Washington Post*, 9 October 1988.

petition laws, for example, hold that a clause requiring a royalty on total output is permissible if it is for the convenience of the parties involved–but not if the licensee (Farmer Brown) is 'coerced'.

Thus, if Brown can get a contract with Biotech but manage to create a record of some reluctance on his part to accept the terms of the firm, there is a good possibility that he will later be able to escape from his obligation to pay royalties, based on a claim of coercion by the 'monopolist'. Competition law will prevent Biotech enforcing its patent against Brown. It may then, if it deals with Brown at all (it might, for example, integrate vertically into pig farming to avoid dealing with the Browns of the world), devise royalty mechanisms more acceptable to competition policy law but less efficient economically.

Biotech, for example, might simply try to sell Brown one piglet at a very high price and not try to charge royalties on future offspring. But this could place excessive risk on Brown and his financial backers. Every time the piglet sneezed, Brown's bankers would catch cold.

The new OECD report questions whether it makes sense to call Biotech a monopolist in the first place. The firm would certainly have exclusive rights over its new animal because of the patent law, but this legal right does not necessarily mean that the firm would have *market* power in an economic sense. Other biotechnology firms, for example, may patent other desirable pigs. And there are all sorts of other, unpatented pigs out there on the market which can be seen as actual or potential competitors of the patented pig, again limiting the market power of Biotech: the higher the price it attempts to charge for its superpig, the better value its more modest cousins will appear.

The report also questions the concept of 'monopoly leveraging' or 'monopoly extension' which often figures in cases involving the licensing of intellectual property. In our example, Biotech could be challenged under traditional competition policy analysis for trying to 'extend its monopoly' to unpatented livestock by setting the royalty on total output. But the farmer is unlikely to pay more for the pig than he thinks it is worth, no matter how the royalty is paid. In other words, challenging a royalty because it is based in part on unpatented items can elevate form over substance.

Do 'Tie-Ins' Help the Consumer?

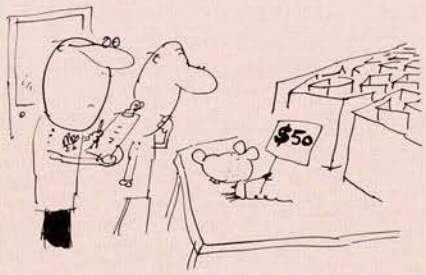
Downstream from the farm, sausage-makers are busy. Their work, too, might come to the attention of competition-policy officials concerned with patent licensing practices. If, say, someone invented and patented a better sausage-stuffing machine, he might then offer to license the machine free of charge to sausage-makers, but require that the users buy their sausage casings only from him, and for more than the market rate. This kind of licensing contract is called a 'tie-in', since the availability of one product is conditional on the purchase of another.

Tie-in contracts in patent and know-how licensing agreements have often been challeged by competition authorities, especially when there is no direct effect on the quality of the final product. If the inventor could show that his machine would not work properly or that the sausages would be inferior with other people's casings, thus damaging his reputation, he could probably defend the tie-in. Without such an argument, he could well be accused of trying to 'extend his monopoly' to unpatented casings and the tie-in would be disallowed.[3]

The new report questions whether tie-ins unrelated to quality control should be disallowed, arguing that they could well stimulate competition. Different sausage-makers, for example, may be willing to pay different amounts for the machine depending on their volumes of output. The inventor may not be able to discover this beforehand and negotiate accordingly; but production volumes will become apparent *ex post* by the number of casings purchased. By shifting his source of profit from the machine to the casings, the inventor will be better able to charge each user what he is willing to pay.

How can such pricing benefit competition? In the long run it may produce more inventions because the inventor is better able to capture the market value of his creation. Thus he is rewarded for the money and effort he has invested in risky research. Others, seeing this inventor rewarded, should also be encouraged to try to innovate. Even in the short run, competition can

FIRST, INVENT YOUR MOUSE



The first patent for an artificially engineered higher life form was awarded to Harvard University in April 1988. Two molecular geneticists there, Philip Leder and Timothy A. Stewart, used recombinant DNA technology to inject genes suspected of being carcinogenic into fertilised mouse eggs. The resultant 'transgenic' mice carried the implanted gene. Harvard has licensed the US chemical company Du Pont to sell the mice, at a price around $50 a mouse, for use in cancer research.

3. Indeed, there is a 'sausage-casing case' discussed in **Competition Policy and Intellectual Property Rights**.

benefit if the tie-in helps to expand use of the new machine: that is, if the tie-in were prohibited, the inventor would have to raise the price of the machine. This action may well make the machine too expensive for small users or too risky for those not persuaded of its usefulness. By the 'metering tie-in' more people can benefit from better technology.

But competition officials would be concerned if the licensor could use the tie-in to gain real market power in the tied-good (here the sausage-casing) market. That could conceivably happen, but it would require particular conditions in the casing market. For example, the licensor must be able to gain a large share of the casing market, and entry into it must be difficult. If these conditions are absent, it is unlikely that the casing tie-in would harm competition.

Why should that be so? If, for example, the licensor had to compete with other machine licensors, he might not be able to gain a large share of the casing market because some sausage stuffers, using other machines, would not be subject to his tie-in. Or he might manage to license most of the firms but not many of the larger ones, again keeping competition alive in the casing market. Finally, entry into the casing market might be relatively easy to accomplish, again limiting the risk that the licensor would gain effective market power in casings.

Promoting the Product

But, to return to the 'transgenic' patented pig, it is not too hard to imagine that transgenic pork could run into some resistance from consumers, who might wonder whether it was really safe to eat. Even if safety were not a real issue, who would be willing to incur the expense of informing consumers? Farmer Brown might be better placed than Biotech to do the job (the firm, for example, might be based overseas), but could be reluctant to undertake the cost of an advertising campaign which would benefit other farmers as well as himself. If the firm licensed other farmers in Brown's area, they would enjoy increased sales from Brown's efforts to educate consumers about the safety of his (and their) product. Because Brown would not be able to capture all the benefits from an investment in advertising (others will be 'free-riding' on his efforts), he is likely to invest less than is optimal from the point of view of the firm.

One way for a licensor to solve such a free-riding problem is to grant Brown an exclusive territory and then to restrain other licensees from selling to Brown's customers. This should give Brown an incentive to promote the new pig more vigorously than he would without an exclusivity clause.

But competition policy has sometimes disapproved of such restraints because of concern over maintaining competition between licensees (intra-brand competition). The new OECD report takes a different tack and suggests that the point of departure should be the effect on competition between brands. Thus the concern of competition policy officials should initially be on whether the restraint would be likely to promote competition between the patented pig and its unpatented rivals.

□□

Transgenic pork has not, as far as is known, yet arrived at the grocer's. Yet competition officials constantly face questions concerning the propriety of clauses in patent and licensing agreements. The new OECD report suggests a method for analysing such clauses in a way which takes into account effects both stimulating and hindering competition. This analysis will serve both to increase the incentives to innovate and the benefits that consumers obtain. ■

NEW MOVES ON LICENSING RESTRICTIONS

The new OECD report, **Competition Policy and Intellectual Property Rights**, broke new ground in the OECD's treatment of licensing restrictions. The OECD Council, therefore, when it considered the report on 31 May 1989, repealed its 1974 Recommendation on Restrictive Business Practices related to Patents and Licences and recommended instead that member governments take into account, insofar as their laws permit, the analysis contained in the Conclusions of the new report.

Competition Policy and Intellectual Property Rights includes a discussion on the competition laws and policies of OECD member countries which govern the restrictions included in patent and know-how licensing agreements. In addition, the report presents a critical survey of major court decisions in OECD countries on the legality of various restrictive clauses. The judicial treatment of a dozen types of clauses is covered, including restrictions on price, output, territories and field of use. Package licensing, tie-in sales, exclusivity requirements and refusals to license are also covered. The report also summarises the important new regulations and enforcement guidelines applicable to such agreements recently published by the Fair Trade Commission of Japan, the Department of Justice of the United States and the Commission of the European Communities.

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Liberating Capital Movements
A New OECD Commitment

Robert Ley

OECD member countries have recently reached agreement on a broad new commitment to liberalise international capital movements and trade in financial services. The new agreement, which came after several years of investigation and negotiation, involves a far-reaching amendment to the OECD Codes of Liberalisation of Capital Movements and Current Invisible Operations.[1] This is the fourth sectoral agreement in recent years involving strengthened liberalisation commitments under the OECD Codes, following those on insurance (1984), tourism (1985) and audiovisual works (1988).[2]

There has hardly been any recent development in the world economy as dramatic as the growth of banking and financial services. Domestic financial markets have grown and diversified nearly everywhere in the OECD area, and international financial markets have expanded meteorically. The international monetary system has changed too, allowing much wider exchange-rate flexibility. Government attitudes have shifted decisively in favour of developed capital and money markets domestically and increased freedom for international operations.

In domestic markets, the traditional separation of short- and long-term markets is disappearing and the distinction between banking and capital-market activity has become blurred. A unified financial market is now emerging in which a wide variety of competitive forms of financing and savings instruments is available.

Internationally, the spectacular growth of the euromarkets, the removal of controls over capital movements by many countries and the internationalisation of commerce and industry have integrated national financial markets more closely, as well as stimulating the growth of international markets. The provision of financial services across national boundaries is an important feature of this integration process.

In virtually all OECD countries policies now favour liberalisation and the gains it can bring in resource allocation and additional opportunities for savers and investors. Governments have realised that a competitive financial sector is vitally important and cannot be developed behind a protective wall. They have also become convinced that it is difficult to enforce an effective system of capital controls unless they are so tight that they interfere with international trade in goods and services.

The European Communities, in the move towards the Internal Market of 1992, have adopted a Directive on the complete freedom of capital movements that will come into effect on 1 July 1990 and complementary directives on banking and financial services are under active consideration. The six countries of the European Free Trade Association (EFTA) are considering ways of enlarging the benefits of the Internal Market in banking and financial services (and in other areas) to cover a 'European Economic Space' of 18 countries. And in the current Uruguay Round of trade negotiations, banking and financial services have been identified as a sector that requires special attention.

In the OECD, work began in 1984 on a thorough overhaul of the two Liberalisation Codes to bring them up-to-date in banking and financial services. Some of the results of the fact-finding work on obstacles to international trade in banking and financial services have already been published.[3] But the main task was to expand the liberalisation obligations of the member countries and, in May 1989, this endeavour was crowned with success when agreement was reached to amend the Codes.

The amendments give the Codes comprehensive coverage of all aspects of banking and financial services, thereby reinforcing the ability of the OECD to monitor restrictions in individual countries and to promote further progress towards liberalisation. The new provisions cover three main activities—capital movements, cross-border services and the right to establishment.

Capital Movements

Under the revised Code of Liberalisation of Capital Movements, OECD countries are committed to bringing about their *complete* liberalisation. Virtually all international capital movements, including short-term ones, are covered by the new Code, the only significant exceptions being mortgage credit, consumer credit and operations by governments on their own account.[4] Liberalisation, nonetheless, may be pursued progressively over time, since member countries not yet

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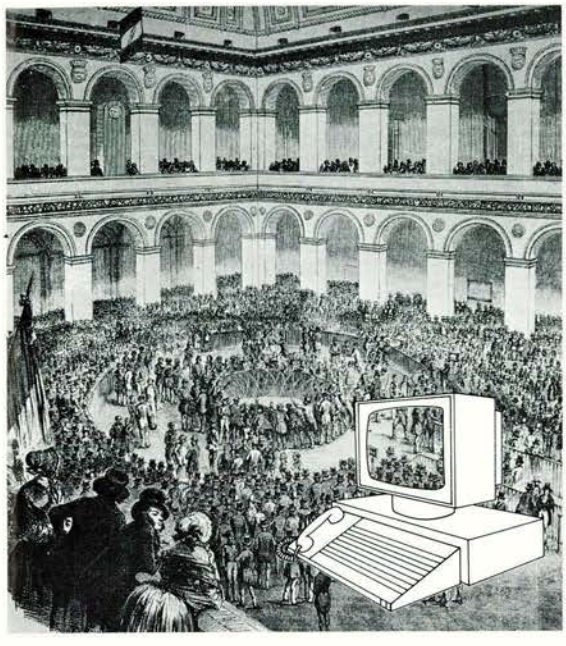

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ready to liberalise can lodge 'reservations' to specific operations (box, p. 25).

The new items not previously covered by the Code are principally:

- money market operations, including those in securities and the inter-bank market
- short-term financial credits and loans
- foreign exchange operations, including spot and forward transactions
- swaps, options, futures and other innovative instruments
- financial back-up facilities
- financial credits and loans taken up abroad by non-financial resident enterprises
- deposit accounts in foreign currency.

Other changes provide that certain governmental measures not previously regarded as restrictions will now be subject to OECD surveillance. These fall into three categories: payment channels, equivalent measures, and leads and lags.

Payment channels are those through which transfers are made at rates of exchange other than prevailing official market rates. They include two-tier exchange arrangements that may affect a wide range of capital movements, as well as 'switch' markets and investment currency markets which mainly deal with international transactions in securities. It has long been necessary to notify such arrangements to the OECD for examination in the same way as measures that are restrictive within the sense of the Code, but it has now been decided to consider them as restrictive whenever the resulting exchange-rate differential exceeds 2% continuously for a period of several months.

Equivalent measures involve, for example, compulsory deposit requirements for outward portfolio investments, tax or interest-rate penalties on cross-border investments, and queueing arrangements for bond issues where they operate to the disadvantage of foreign issuers. Such administrative procedures that effectively impede operations covered by the Code are now regarded as restrictive and hence subject to the usual requirements of notification, examination and progressive liberalisation. These measures were formerly treated differently because they raise the cost of operations without altogether preventing them.

Leads and lags measures now considered as restrictive include requirements for the repatriation and surrender of foreign exchange earned through exports, limits on the period for acquiring foreign exchange required for import payments, and any restrictions on the terms on which credits and loans may be contracted or subsequently renegotiated between the parties concerned. Such measures are considered to be incompatible with the liberalisation process and should be phased out.

The liberalisation of capital movements as prescribed in the new Code would go a long way towards giving all parties complete freedom in the use and provision of banking and financial services across national frontiers. For

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1. **Liberalisation of Capital Movements and Financial Services in the OECD Area**, OECD Publications, Paris, forthcoming 1989.

2. Results of the investigative work in these sectors were reported in earlier issues of **The OECD Observer**: 'The Obstacles to International Trade in Services: Insurance...and Tourism', No. 126, January 1984; 'Obstacles to International Trade in Services: Banking', No. 128, May 1984; 'Tourism: An Economic Activity in its Own Right', No. 138, January 1986; 'Liberalisation of Trade and Investment in the Services Sector', No. 139, March 1986; 'Towards Freer Trade in Services: Audiovisuals', No. 141, July 1986.

3. See OECD Bibliography, p. 26.

4. The member countries were not ready to liberalise mortgage credit and consumer credit operations in the absence of harmonised regulations on such operations. As to governments, they should be as free as private companies when operating on their own account, e.g., when issuing government bonds or hiring the services of underwriters or broker/dealers.

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enterprises it would mean a comprehensive choice of financing and investment vehicles for raising capital, managing liquid funds and hedging exchange rate and interest-rate risks. Financial institutions would be able to lend and borrow freely and operate in the spot and forward foreign-exchange markets. Securities houses would be able to buy, sell and swap securities and other investment instruments, choosing freely between long-term, short-term and innovative instruments. Individuals would be able to transfer funds abroad, operate bank accounts in foreign currencies and invest anywhere in securities and real estate.

But even if there were complete liberalisation of capital movements, restrictions might still exist on the provision of banking and financial services and on access to suppliers. An enterprise in country A, for instance, may have access to the capital market in country B only through intermediaries that are resident in country B and are authorised to engage in international transactions. It might also be required to pass through an authorised intermediary in its home country. While such requirements do not interfere with the movement of capital, they clearly restrict the customer's choice of intermediary and limit cross-border competition in the provision of financial services.

Cross-border Services

Cross-border services provided to residents by non-resident suppliers have not hitherto been covered by the Code of Liberalisation of Current Invisible Operations, although in many cases the service is so closely bound up with the related capital movement that measures affecting any aspect of the combined operation are effectively covered by the Code of Liberalisation of Capital Movements. Now a new section will be added to the Code of Liberalisation of Current Invisible Operations setting out obligations for the whole range of banking and financial services. This new section covers:

- *payment services*, including the issue and use of cheques, travellers' cheques, cash and credit cards, and the transfer of funds
- *banking and investment services* provided by professional intermediaries in the markets for securities and other financial assets, such as underwriting and broker/dealer services
- *settlement, clearing, custodial and depository services* for liquid funds and securities, non-securitised claims and foreign exchange
- *asset management*, including cash and portfolio management, pension fund management and trust services
- *advisory and agency services*, including the provision of ancillary financial services such as credit reference and analysis, investment research and advice, mergers, acquisitions and restructurings.

The liberalisation obligations on cross-border banking and financial services are qualified so as not to undermine the regulatory responsibilities of national governments for the maintenance of fair and orderly markets and sound institutions and the protection of investors. Countries are nonetheless required to ensure that domestic regulations do not impede cross-border competition and are applied in a non-discriminatory manner to resident and non-resident enterprises alike. Member countries are not allowed to require that non-resident service providers establish themselves in the country concerned since that would obviously defeat the purpose of liberalising cross-border operations.

No Obstacles to Establishment

The Code of Liberalisation of Capital Movements already contains provisions governing the right of non-resident enterprises to establish an operating presence in host countries and to compete with one another and domestic suppliers on an equal footing.

Member countries are thus already required to remove all obstacles to the establishment of subsidiaries, branches and representative offices by non-resident institutions: they must allow non-resident suppliers to engage in all the activities open to domestic institutions and ensure that any conditions of establishment do not weigh more heavily on non-resident than on resident enterprises. Those obligations complement the provisions of the OECD's National Treatment instrument which requires all member countries to accord the same treatment to foreign-owned or controlled enterprises, once they have established themselves, as to national ones.

The new obligations in the Code of Liberalisation of Current Invisible Operations will deal with the conditions of establishment for branches, agencies and other offices that are not subsidiaries. Since branches, etc., are not incorporated under domestic law, the government of the host country may have to treat them differently from

THE APPROACH OF THE OECD CODES TOWARDS LIBERALISATION

When the OECD was formed in 1960, its member countries agreed in the founding Convention 'to pursue their efforts to reduce or abolish obstacles to the exchange of goods and services and current payments and maintain and extend the liberalisation of capital markets'. This commitment was given concrete expression by the adoption in 1961 of the OECD Code of Liberalisation of Current Invisible Operations which has been the international framework agreement for the liberalisation between member countries of current payments as well as the major service activities. The companion Code of Liberalisation of Capital Movements was adopted at the same time. The two Codes are Decisions of the OECD Council, which means they are binding international agreements.

Since then, these Codes have played an important role in both maintaining the momentum towards the liberalisation of current payments that had been achieved in the 1950s and preventing the imposition of new restrictions. The increasingly widespread progress towards the liberalisation of capital movements, which gathered speed in the late 1970s and 1980s, has to be accompanied by the removal of barriers to trade in the international service sector.

The underlying liberalisation objective of both Codes is that residents of different OECD member countries should be as free to transact business with one another as are residents of a single country. Central to each Code therefore is the commitment by member countries to remove restrictions on listed categories of operations between residents and non-residents.

The Code of Liberalisation of Current Invisible Operations, in addition to covering a wide range of current payments relating to foreign trade, production and business and to income from labour and capital, also covers a broad range of service operations, including detailed treatment of the sectors of insurance, transport, tourism, audiovisual works and now banking and financial services.

In the case of the Code of Liberalisation of Capital Movements, the listed operations include (since a 1964 reform) most medium and longer-term financial transactions, such as operations in securities, commercial and financial credits, personal capital movements, and direct investment in all sectors, including services. The obligations with respect to liberalising direct investment were extended in 1984 to include related restrictions on the right of establishment. The 1989 amendment extends the list of operations to be liberalised to include short-term capital movements, such as money-market transactions, as well as operations in forward markets, swaps, options, and other innovative instruments.

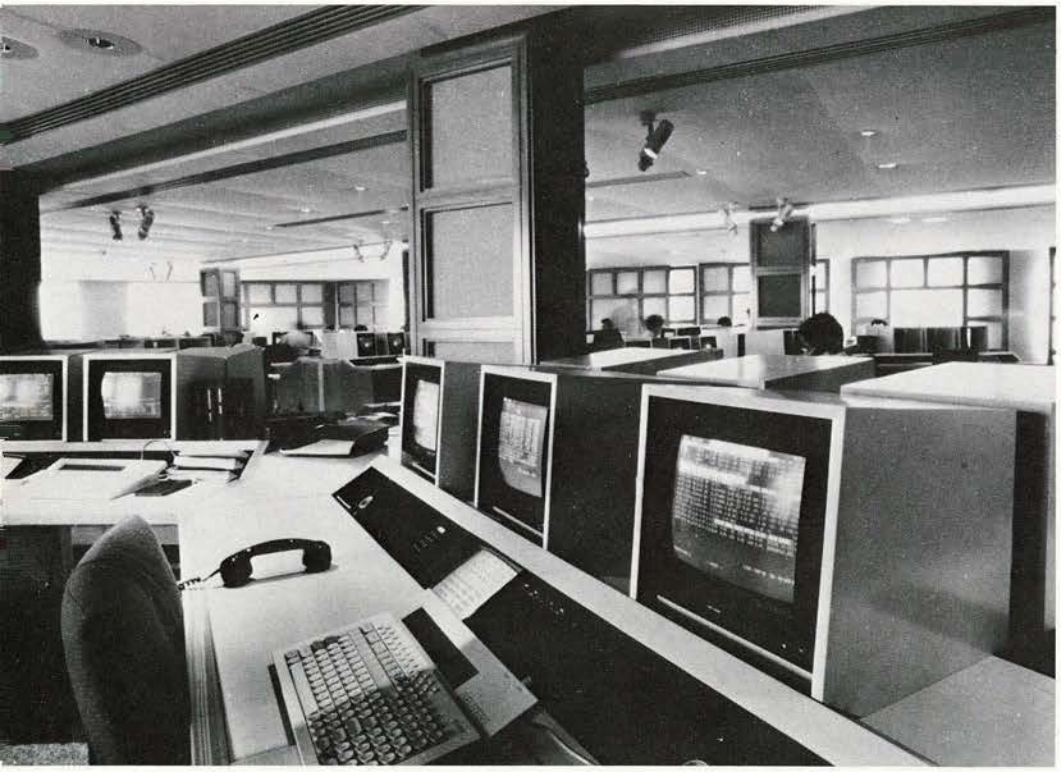
An important feature of the Codes is that liberalisation measures–and remaining reservations–must be applied to all member countries on a non-discriminatory basis. The Codes allow an exception to the principle of non-discrimination for member countries forming a 'special customs or monetary system' such as the European Economic Community. Under this exception, OECD countries participating in such systems may undertake more rapid or more extensive liberalisation among themselves than for the OECD area as a whole. But they may not raise new barriers to operations involving the residents of OECD member countries outside the systems concerned.

The obligation under both Codes to liberalise the listed operations is a commitment by member countries to a process of progressive liberalisation over time, under a system of international surveillance and review. This process allows a country to lodge reservations at the outset on operations it is not able to liberalise immediately. There are also provisions for accommodating temporary difficulties in maintaining liberalisation by allowing a country to request a 'derogation' but there are quite strict criteria for assessing the admissibility of a request to derogate from a liberalised position. Any remaining restrictions must be non-discriminatory and transparent. Moreover, member countries must accept regular reviews by the OECD of their outstanding reservations and derogations and the underlying restrictions and policies, a process which concludes with recommendations being addressed to them by the OECD Council. These reviews are carried out by the Committee on Capital Movements and Invisible Transactions (CMIT). In these reviews, the measures in question are examined in the light of the changing economic and financial circumstances faced by member countries and the justifications presented for maintaining the measures. It is a process founded on the analytical and consensus-building capabilities of the OECD, together with the basic commitment of the member countries to the objective of liberalisation and the accepted principles of multilateral co-operation.

R. Bossu/Sygma and Gérard Baldrati

domestic institutions. The provisions in the new Code recognise this distinction, but require that branches and the like not be subject to more burdensome requirements than domestic enterprises—that is, they must be accorded 'equivalent treatment' to domestic enterprises. The revised Code will contain a general obligation to this effect as well as specific provisions covering:

- *authorisation*—the procedures to be followed in permitting the establishment of branches and agencies by non-resident enterprises
- *representation*—the right of foreign enterprises to appoint any competent person, irrespective of nationality, as their representative, provided he is resident in the host country
- *representative offices*—governments may require advance notification for the establishment of a representative office, but they may not apply an authorisation procedure
- *self-employed intermediaries*—governments must avoid restricting the nationality of persons authorised to act as intermediaries in the supply of services or to operate in any segment of the markets relating to those activities (chiefly stockbroking)
- *restrictions imposed by private associations and self-regulatory bodies*, not least stock exchanges—governments are called upon to ensure that the measures taken by non-official bodies also conform to the standard of non-discriminatory treatment
- *prudential considerations and requirements for establishment*—limits are set on prudential and monetary policy requirements governing the branches and agencies of non-resident enterprises.



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By their scope and vision, the recent amendments to the Code represent a milestone in the promotion of liberalisation by the OECD. Before the new obligations come into effect in about one year's time, member countries will either bring their policies into conformity with the new obligations or they will lodge reservations on items where immediate liberalisation is not possible. Once the reservations are in place, the member countries will submit to periodic examinations of their remaining restrictions and thereby promote, over time, the complete liberalisation of capital movements and financial services in the OECD area. ■

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Eliminating the US Budget Deficit

Byron Ballis and Richard Herd

One of the important uncertainties facing the world economy is whether the federal budget deficit of the United States will remain high or be reduced in line with the 'Gramm-Rudman-Hollings' Congressional mandate that it be eliminated by 1993. The consequences, not only for the United States but also for the rest of the world, will be significant in both cases. Two OECD economists have recently produced a set of simulations[1] which examine the economic implications of a movement towards a balanced budget and focuses, in particular, on the interaction between fiscal and monetary policy and the extent to which monetary policy stances in the United States and in other countries could affect the outcome for activity and inflation in the OECD countries.

The increase in the budget deficit in the United States has contributed to a weakening current account and to pressure on the inflation rate—as it would in any other economy. If monetary policy initially accommodates the demand generated by the increased budget deficits, there would later have to be a tightening of monetary policy to fend off inflationary pressures, leading to higher interest rates. A sustained *reduction* of the budget deficits, on the other hand, could significantly lessen the vulnerability of the US economy to inflation and could improve the current account. This action would ease the pressure on interest rates over a number of years, though eventually monetary growth would have to be lowered to ensure a durable reduction in inflation. Interest rates might possibly fall, not only in the United States, but also worldwide as the reduction of the budget deficits decreased the dependence of the US economy on foreign savings.

The Federal budget deficit was brought down from some 6% of GNP in 1983 to about 3% in 1988. The Congressional Budget Office (CBO)[2] estimates that by 1993, even with a marked degree of fiscal rigour, the deficit will still be almost 2% of GNP. This projection assumes that all forms of expenditure where entitlements are not fixed by law remain stable in real terms, and therefore fall markedly relative to GNP; the defence budget, for instance, is projected to return to its 1980 share of GNP by 1993. In spite of a projected growth of overall expenditure well below that of GNP, the CBO, like the OECD, projects the deficit to remain large and well above the targets of the Balanced Budget and Emergency Deficit Control Act, known, after its three Congressional sponsors, as Gramm-Rudman-Hollings (GRH) (Figure, p. 28).

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This Act was voted into law in 1985. It laid down a target path for the elimination of the Federal government deficit by 1991. It contained a series of provisions whereby Federal expenditure was to be reduced if the projected deficit exceeded the target laid down by the Act. Certain of its provisions were subsequently ruled unconstitutional, and it was amended in 1987. At the same time, the period for eliminating the deficit was lengthened, the new Act extending the 'deadline' until 1993.

Budgetary cuts of the scale necessary to achieve the GRH targets would have considerable macro-economic effects on economic activity, inflation and external balances. Moreover, the precise impact of any fiscal policy designed to achieve budgetary balance would depend on the monetary policies adopted—both in the United States and abroad—when the budget cuts are introduced. The mix of policies that are actually implemented will depend to some extent on the world economic situation and, in particular, the degree of inflationary tensions and the concern attached by the world's financial markets to the size of the US current account.

The simulations presented here[3] are

1. Richard Herd and Byron Ballis, *Eliminating the U.S. Federal Budget Deficit by 1993: The Interaction of Monetary and Fiscal Policy*, Working Paper No. 59, Economics and Statistics Department, OECD Publications, Paris, 1988.

2. The Congressional Budget Office provides the Congress with assessments of the economic impact of the Federal budget.

3. They have been calculated from projections published in the OECD **Economic Outlook**, Nos. 43 and 44, OECD Publications, Paris, June and December 1988.

stylised exercises intended to illustrate the economic policy trade-offs from meeting the targets of Balanced Budget Act.

Fiscal Restriction

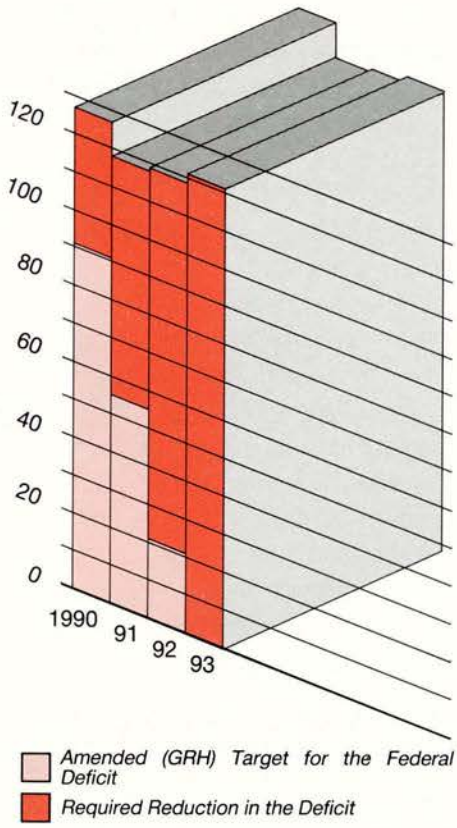
The US economy is now in its seventh year of continuous expansion, operating nearly at full employment and with both the Federal budget and the current account heavily in deficit. If unemployment and spare capacity continued at their current low levels or shrank even further, the US economy might face an acceleration in the rate of inflation and a reversal of the recent improvement in the current account. A combination of tight economic policies, such as a sizable reduction of the Federal budget deficit and continued monetary restraint, would do much to keep these inflationary pressures subdued and contribute to further improvement in the current account, ensuring the smooth financing of the deficit over the medium term.

Such a package (Table 1, first column) would reduce domestic demand and incomes sharply, thus lowering inflation. Private investment and output, too, would be depressed both because of implied higher *real* interest rates and reduced profitability. Private saving would be reduced markedly (Table 2, first column) as incomes fell, although the increase in real interest rates would tend to offset this effect by making saving more attractive.

The main counterpart to the reduction in the Federal deficit, in these circumstances, would be a reduction in the current-account deficit (Table 1, first column; also shown as lower capital inflow in Table 2, first column). By 1993 this deficit would improve by $65–70 billion, more than half of the change in the Federal deficit. The resulting current-account deficit would be about $50–100 billion. It might be reasonable to expect that such a figure could be absorbed by international financial markets without increasing the dollar share of international portfolios.

Inflation would be reduced by an average of one percentage point over the whole period from 1990 to 1993. The unemployment rate could be about one percentage point higher by the end of 1993, reflecting growth in output that would remain about three-quarters of a point below the sustainable medium-term rate of growth of the economy; the level of output in 1993 could be three points lower than that projected without any policy changes. The trading partners of the United States could also see a significant fall in the level of their real output—almost two percentage points by 1993—because of the reduction in demand for their products by US households and enterprises.

Figure
ELIMINATING THE U.S. BUDGET DEFICIT
billion dollars



Note: Since this study was finalised, budget deficits over this period have been revised upwards; the necessary expenditure cuts would therefore be larger than those shown here.

Source: OECD.

On these assumptions, US tax revenues would be lower than if no action were taken because economic activity is weaker. As a result, cuts in government expenditure would have to be larger than the initial gap between the deficit and the targets of the Balanced Budget Act. By 1993, the expenditure cuts ($160 billion, to eliminate a deficit of $120 billion which would otherwise obtain) would represent almost 12% of Federal government expenditure (excluding interest payments)—the equivalent of the entire health-care budget or half the defence budget. The scale of the expenditure cuts is so large that taxation increases might have to be considered to replace some expenditure cuts.

The substantial reduction of inflation achieved by this method is brought about entirely by the measures taken to balance the budget by 1993; in this simulation, nominal interest rates do not change from their current positions.

A similar reduction of inflation could be achieved, over the medium term, in the absence of fiscal restriction, by a sizable increase of nominal interest rates (about 2½%) over and above their present high positions. But this policy would have severe drawbacks. Sharply rising interest rates would, of course, reduce inflation but they would also choke growth and the budgetary problem would become worse. The Federal deficit would soar as tax receipts shrank without any offsetting reduction in government expenditure. In addition, this would be compounded as higher interest rates increased the cost of servicing the Federal debt. Higher rates in the United States would also add to the cost of financing the current-account deficit. Most of the debt that finances the US current

Government of the United States

account is denominated in dollars, and so high interest rates on dollar borrowing would attenuate the improvement in the current account normally associated with a fall in output.

Changing the Mix of Policy

A trade-off between budgetary cuts and some easing of monetary policy could allow for a change in the mix of monetary and fiscal policy, which could leave US economic activity and inflation little changed while achieving the targets of the Balanced Budget Act. Such a mix might be feasible if inflation were not seen as a major risk. Indeed, in a second simulation, it is assumed that the reduction in the budget deficit would be accompanied by a slight relaxation of monetary policy such that short-term interest rates are 1½ percentage points lower than in the first simulation discussed above.

A policy change of this sort would leave inflation unchanged in the short term and might raise US output slightly if other countries chose also to lower interest rates by the same amount (Table 1, second column). Real interest rates would be lowered, which would thus tend to raise the volume of business and housing investment. Lower real interest rates would also tend to lower personal saving. The gap between private-sector saving and investment would increase by almost as much as the decline in the Federal deficit, and so there would be little change in the current-account deficit. But the economy would be moved onto a growth path with a higher growth rate of the capital stock. The lack of effect on inflation is easily explained: lower government expenditure would offset higher private-sector demand and higher investment lead to a decrease in the constraints on available production capacity.

In such a simulation, a change in the mix of fiscal and monetary policies would make a balanced budget much easier to achieve. Expenditure cuts

Table 1
THE IMPACT OF DIFFERENT POLICY COMBINATIONS
average changes from baseline over 1990–93

	Fiscal Tightening	*Fiscal Tightening in USA and Monetary Easing*		
	In USA only	*In all countries*	*Outside USA*	*In USA only and dollar falls*
United States				
Federal deficit ($ bn)[1]	–110.0	–110.0	–110.0	–110.0
Expenditure cuts ($ bn)[1]	160.0	60.0	150.0	10.0
Real expenditure cuts ($ bn)[2]	109.0	51.0	101.0	27.0
Treasury bill rate (%)	0.0	–1.5	0.0	–1.5
Money stock (% p.a.)	–1.0	0.7	–0.9	1.6
Output growth (% p.a.)	–0.7	0.2	–0.6	0.4
Inflation (% p.a.)	–1.0	0.0	–1.0	0.9
Unemployment rate (%)[1]	1.0	–0.1	0.7	–0.5
Current account ($ bn)	68.0	–10.0	71.0	–1.0
Other OECD Countries				
Output growth (% p.a.)	–0.4	0.2	–0.1	0.0
Inflation (% p.a.)	–0.2	0.1	0.0	–0.2
Interest rates (%)	0.0	–1.5	–1.7	0.0

1. Outcome in 1993.
2. 1988 prices; outcome in 1993.

Note: The baseline for these assumptions is a medium-term projection of all OECD economies which, for the United States, uses the current services projection of the Congressional Budget Office as a path for Federal expenditure, modified for a higher level of interest rates.

In each of the cases considered, US Federal expenditure is lowered by an amount sufficient to eliminate the 1993 Federal budget deficit of $110 billion. The cases differ in the responses of the monetary authorities to a change in fiscal policy.

Table 2
CHANGES IN SAVING AND INVESTMENT IN THE UNITED STATES
changes from baseline in 1993–% of GDP

	Fiscal Tightening	*Fiscal Tightening in USA and Monetary Easing*		
	In USA only	*In all countries*	*Outside USA*	*In USA only and dollar falls*
Household saving	0.2	–1.0	0.2	–1.4
Business saving	–0.8	–0.1	–0.7	0.0
Private saving	–0.6	–1.1	–0.5	–1.3
State and local saving	–0.8	0.1	–0.7	0.5
Federal saving	1.6	1.7	1.5	1.8
Domestic saving	0.2	0.7	0.3	0.9
Capital inflow	–1.0	0.0	–1.0	0.0
Gross investment	–0.8	0.7	–0.7	0.9
Business	–0.3	0.2	–0.2	0.3
Housing	–0.3	0.2	–0.2	0.4
Stocks and residual error	–0.3	0.3	–0.3	0.3

would not be required to compensate for losses in tax revenues. Moreover, the reduction in interest rates would result in a significant fall in interest payments on the Federal debt, and the required cut in non-interest payments would be reduced to $60 billion by 1993, instead of $160 billion as in the first simulation.

Foreign Responses to US Policy Changes

A third simulation assumes that there is little scope for changing US monetary policy when budget cuts are implemented–say, because of concern about inflation–but assumes that countries outside the United States are in a position to lower interest rates in order to offset the effects on their activity of a US fiscal tightening (Table 1, column 3). US demand would be raised somewhat through a higher volume of exports. This would tend to result in a better US trade balance than would occur when the economies outside the US are depressed by the expenditure cuts. The improved US trade balance would be offset to some extent by a fall in earnings from investment abroad as foreign interest rates fall.

In this third simulation, the rate of inflation would still decline in the United States, but the required budgetary cuts–at $150 billion by 1993–would remain large. Countries outside the United States would have been able to avoid the depressive impact of the fall in output caused by the budget cuts in the United States. Indeed, the easing of monetary policy in those countries would stimulate their domestic demand and would broadly offset this weakening of their foreign trade. In the circumstances of this simulation there might be some risk that the dollar could appreciate, thanks to the improvements in the US current account and a widening interest-rate differential in favour of the dollar as interest rates fall outside the United States. Nevertheless, this outcome suggests again that a reduction in the US budget deficit offers the possibility of lower long-term interest rates throughout the world.

What Effect on the Dollar?

A policy of fiscal tightening accompanied by monetary easing in the United States could carry some risks. That combination would be feasible only if the underlying development of the economy were sound, and the current account improving. If markets became unwilling to finance the continuing large deficits, there might be downward pressure on the dollar, which might be amplified if governments outside the United States did not lower their interest rates after the fall in US rates. If, for example, as a result of these two pressures, the dollar were to fall by a purely illustrative 5%, inflation in the United States might increase significantly (Table 1, column four). And simultaneously there might be a slight deterioration in the US current account.

□□

Implementation of the packages designed to meet the targets of the Balanced Budget Act for 1988 and 1989, together with higher growth, have reduced the near-term deficit and, to a somewhat lesser extent, the medium-term deficit. The ratio of Federal government debt to GNP peaked in 1987 and is now projected to remain stable. Nonetheless, further measures will be required to balance the budget by 1993.

Such actions could bring significant benefits: some combination of lower real interest rates, lower inflation and a smaller current-account deficit would be likely. If inflation is thought to be a real danger, bringing the budget back to balance could avoid a significant tightening of monetary policy and substantially reduce the current-account deficit. On the other hand, if the risk of inflation is seen as small, a reduction in the deficit could generate a significant worldwide fall in real interest rates.

The precise way in which benefits occurred would depend on the reactions of governments, firms, investors, savers and consumers to the effects of the reduction in the deficit. ■

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Spotlight on

Spain

Since the mid-1980s the Spanish economy has exhibited remarkable strength and dynamism. Led by brisk fixed investment, real GDP expanded by more than 14% over the three years to 1988, raising the volume of total employment by some 8% and bringing the excessively high rate of unemployment down by 3 percentage points to just over 18% at the beginning of 1989.

The upswing has been accompanied by a marked increase in the domestic savings rate and a gradual reduction of the inflation differential against the OECD Europe average. But this improvement has not prevented the current external balance from moving into growing deficit. Nonetheless, thanks to massive long-term capital inflows, the balance of payments has remained in comfortable surplus and the peseta under upward pressure.

The vigour of the recovery can in part be explained by the depth of the preceding recession and structural policies pursued since the beginning of the 1980s, aimed at enhancing flexibility in goods and factor markets. Moreover, the reduction of trade barriers and the huge capital inflows since Spain's entry into the EEC have given a strong boost to economic activity. The Spanish economy also benefitted considerably from favourable trends in world trade and oil prices. Finally, a high degree of social consensus was maintained through most of the period, minimising industrial unrest and helping to create a favourable climate for investment and job creation.

Given the momentum which economic growth has acquired both in Spain and in major trading-partner countries, the prospects are for real aggregate demand to continue to grow vigorously, permitting further inroads into the still high rate of unemployment, but also implying a further rise in the current external deficit. The deterioration of the trade balance in volume terms should diminish from 2% of GDP in 1988 to about 1% in 1990, but this would still make for more than a doubling of the current deficit in terms of GDP to over 2%.

The size of the projected deficit over the next 18 months or so should not in itself give rise to particular concern as long as high rates of return on investment continue to attract sufficient capital from abroad and output capacity expands faster in internationally competitive industries than in domestically oriented sectors of the economy. Nevertheless, prudence is required when assessing the willingness of markets to finance large and growing current external deficits over the medium term.

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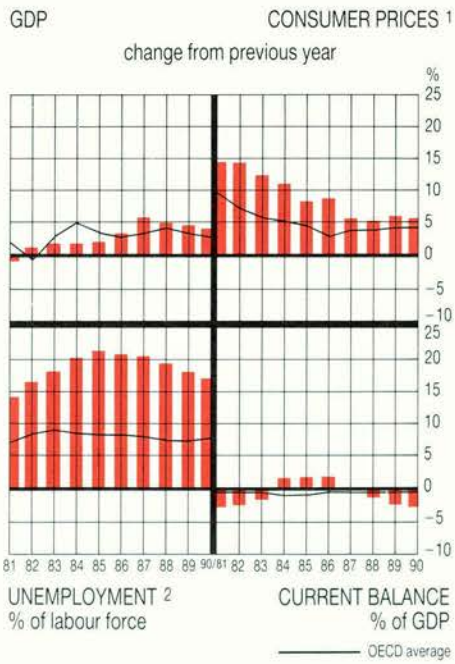

1. Private consumption deflators.
2. National definitions.

Containing Inflation

To maintain a favourable investment climate and external competitiveness, containment of inflation should be the prime aim of policy. The recent reversal of the disinflation process should therefore be considered a matter of concern. On present trends and policies, the rise of the GDP deflator may well accelerate to more than 6% in 1989 and unit labour costs in manufacturing to 4%. The risk of resurging inflation stems not only from excessive

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Plans for improving the public education and health-care systems will make it all the more urgent for the Spanish authorities to contain the growth of other items of expenditure.

domestic demand growth but also from increased union militancy in the face of persistently rising profit margins, notably in sheltered sectors.

Keeping inflation under control will also help to maintain GDP and employment on a satisfactory path. Future employment growth will crucially depend on two factors: the rate of growth of the stock of productive capital, and changes in capital/labour intensity. To maximise employment growth both factors can be positively influenced by nominal and real wage moderation. Real wage gains should generally not exceed underlying productivity growth, and wage structures across industrial sectors, regions and skills should be brought into better line with conditions of supply and demand in individual labour markets. This move would help to improve both the quality of labour supply and employment opportunities for low-skilled labour. Meanwhile, moderate increases in nominal wages are instrumental in keeping inflation at bay and international competitiveness intact, thereby creating conditions for maintaining actual output close to its potential volume.

The generally favourable business situation should provide the authorities with an opportunity for speeding up the pace of deregulation and trade liberalisation as a means of keeping inflation at bay. Since Spain's accession to the EEC, tariffs have been halved on average and import quotas lifted. Competition might be further enhanced as a result of new legislation on restrictive business practices. Constraints on capital exports for business and individuals have been relaxed significantly since 1987, although in the hope of stemming the strong inflow of foreign capital, certain restrictions on borrowing from abroad have been reintroduced. The recent re-organisation of the Stock Exchange, including the abolition of the monopoly position of brokers, should enhance the efficiency of the Spanish capital market.

Measures to strengthen competitive forces should be accompanied by a tighter overall policy stance and better balance between monetary and fiscal policy. A further rise of interest rates, already high, combined with increased upward pressure on the peseta, would certainly put downward pressure on inflation, but would bear harder on industries that compete internationally than on non-tradable sectors. It would therefore be desirable for further policy tightening to place more emphasis on fiscal restraint.

Improving Public Finances

The structural deficit of the public sector, worsened by tax evasion, is still high and the decline in general government net borrowing from 7% of GDP in 1985 to some 3% in 1988 reflects more the cyclical strength of the economy than discretionary action. Since government borrowing, on present trends, is unlikely to drop significantly relative to GDP, further efforts to improve public finance would seem desirable. This would also be in line with the Government medium-term objective to eliminate the deficit by 1992.

In view of taxes on employment and labour income that are relatively high and an overall tax burden that is internationally low, measures to widen the tax base and to combat tax evasion should be intensified. This will require changing tax-paying habits and tax-collecting methods. Public opinion should be made aware of the importance of spreading the overall tax burden more evenly between wage and non-wage incomes. A more equitable system of taxation would induce labour to move to more productive activities and reduce incentives to moonlighting, while strengthening social cohesion and favouring continued wage moderation.

Efforts to increase tax revenue should go hand-in-hand with more effective control over public expenditure, all the more so as the ongoing process of decentralisation tends to stimulate public spending. Plans for

Portugal

improving the public education and health-care systems, for extending social welfare coverage and for raising the share of infrastructure investment in total spending, will entail rising claims on financial resources. These plans are justifiable, but they make it all the more urgent to contain the growth of other expenditure items.

Subsidies, transfers and capital injections into public enterprises have been reduced much less in recent years than might have been expected after three years of a booming economy. The availability and provision of budgetary funds encourage financial laxity and retard necessary structural adjustments. Tighter policies on loss-making enterprises, including closures of non-viable lines of production, would help strengthen public finance. More ambitious programmes of privatisation and sales of public assets could also contribute.

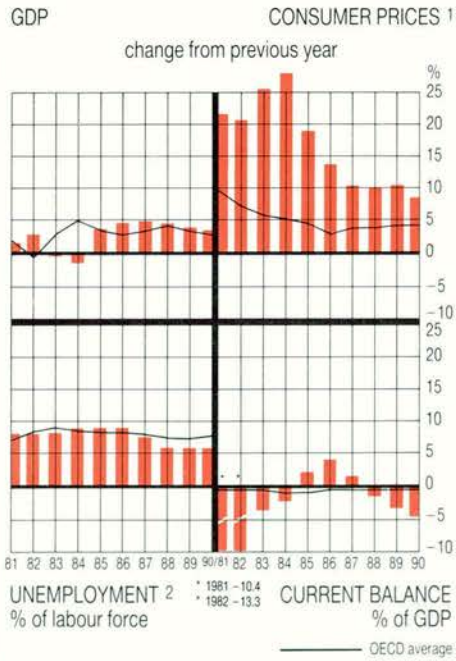
Finally, budgetary as well as efficiency gains are likely to result from reconsidering the costs and benefits of employment subsidies. Subsidising employment creation indiscriminately in a country where demand for labour is growing rapidly and labour reserves are large is not only costly in budgetary terms, but may even fail to provide incentives for the creation of viable permanent jobs. Limiting employment subsidies to new hirings with indefinite contracts does not solve the problem of subsidising jobs which would have been created anyway, nor would it seem reasonable to discriminate against more flexible types of employment contracts. Employment subsidies are difficult to justify unless they are aimed at disadvantaged groups in the labour market. More generally, government assistance to professional training and retraining as well as financial incentives to hire long-term unemployed people would seem reasonable in the light of Spain's staggeringly high youth unemployment and the rapid process of industrial restructuring. ■

Source: **OECD Economic Surveys: Spain**, OECD Publications, Paris, 1989.

Since the mid-1980s the Portuguese economy has experienced a period of strong growth which has allowed it to meet a large part of the country's very brisk domestic demand. Between 1984 and 1988 GDP grew by 18% in real terms. Buoyant growth has boosted employment by nearly 6% over the past three years, bringing a spectacular fall in unemployment (particularly long-term) which was down to less than 6% of the labour force last year. The annual rise in consumer prices remained around 10% in 1988, as in the previous year, compared with about 28% four years earlier, although price increases did accelerate during the year.

Several elements have combined to re-ignite inflation: favourable international factors have gradually disappeared (the price of oil and primary products, and the trend of the dollar); pressure of domestic demand; and the adverse effects of bad weather on agriculture (which were exacerbated by the structural weakness of that sector). Although until now inflation does not seem to have fed through to wage costs, it has certainly eroded some of the credibility of the incomes policy and, if it continues, is likely to affect all wages, mainly because of the pressures on the labour market.

INDICATORS



1. Private consumption deflators.
2. National definitions.

Although Portugal has received substantial transfers from the EEC, the current-account balance deteriorated rapidly in 1988, showing a deficit equivalent to 1½% of GDP, after three years in surplus. The deterioration can be attributed partly to the slowdown in export growth, but above all to the continuing buoyancy of imports, stimulated by the strength of domestic demand. If Portugal were once again to experience rising inflation and if the deterioration in its external position were to continue, it would certainly hamper the structural modernisation and development of the economy, and a sudden adjustment would inevitably follow.

The system of administrative credit controls has shown its limitations in the course of recent years. It has become increasingly difficult to operate in a context of liberalisation and expansion of financial markets, and their integration into the international financial system. The authorities' resolve to make market mechanisms, and thus interest rates, play a larger role in controlling the growth of credit and in its allocation, means that the excess liquidity of the banking system (which is a result of the prolonged co-existence of the quantitative ceiling on bank credit and the large financing requirements of the state) will have to be absorbed first.

The growing recourse of the Treasury to non-monetary means of finance, with ever-longer terms of maturity and market-determined interest rates, has also been an important step in establishing a monetary policy based on the market. The authorities' desire to pursue these

beneficial developments successfully makes a return to disinflation all the more urgent in order to create expectations conducive to the growth of long-term savings.

To cool the economy down, the government has taken a number of measures. The squeeze on consumer credit could calm booming household demand, for cars in particular, which has been largely responsible for the worsening of the trade balance. The package of measures aimed at bringing credit growth under more effective control and reducing domestic liquidity could temper the growth of investment, particularly in housing, and lessen inflationary expectations.

Budgetary Discipline

Between 1984 and 1988 the general government borrowing requirement was cut from close to 13½% to 8½% of GDP, a reduction that was in the desirable direction of redirecting saving towards the productive sector. The steep increase in tax revenue resulting from the introduction of VAT and the pick-up in growth made possible a budget surplus (excluding interest payments) in 1987 and 1988 that will have to be increased in coming years, since the liberalisation of the financial markets could well push up substantially the effective interest rates on the public debt. The projected slowdown in growth should reduce the differential between the nominal GDP growth rate and the effective interest rate on the debt.

This will certainly require stringent control over the growth of expenditure other than interest payments. Yet the upward pressures are strong. A large amount of infrastructure investment is still required, and investment projects have to be co-financed to a large extent in order to qualify for the full amount of EEC aid. A major effort is being made in the health and education systems. The upgrading of social transfers, and the widening of their coverage, is planned. The authorities may therefore have to increase tax pressure.

The income tax reform to be implemented in 1989 is important: it widens the tax base, considerably simplifies the existing system and lowers marginal tax rates. The Portuguese authorities consider that the reform should be fiscally neutral, but in its first year, since the old and new systems will overlap, tax pressure could be stronger than officially projected, which would be a step towards a desirable tightening of fiscal policy. Apart from these immediate effects, fiscal policy could be more effective thanks to the shortening of the time that elapses between the moment income is received and the moment it is taxed, and by the widening of the tax base. The system should avoid a large number of tax deductions and reliefs dictated by short-term considerations.

International Competitiveness

The scale of the capital goods imports required to modernise and equip the economy means that Portugal must maintain its international competitiveness. But because of the acceleration in inflation and low productivity gains, the depreciation of the escudo has not been sufficient to prevent a slight deterioration in competitiveness. To avoid this tendency, increases in wage costs will have to be contained to prevent a wage-price spiral from starting. In this respect, the policy of labour/management consultation, based on a pre-set inflation target, is likely to encounter difficulties in 1989, given the overshooting of the target for 1988.

Although Portugal's overall export performance in the 1980s compares favourably with that of its neighbours, and the commodity structure of its exports has improved in recent years, it is coming under increasing competition from the Asian NIEs; furthermore, most of its exports are still directed towards low-growth markets. Industrial restructuring therefore should continue, stimulated by EEC aid. The implementation of the programme for the co-ordination of financial aid to industry (PEDIP) should make it possible to channel and co-ordinate the use of EEC and national funds.

Wilhelm Braga

Among the elements that have combined to revive inflati structural weaknesses of that sector.

At the same time, direct tax incentives for investment have been progressively eliminated. But other types of incentives have been introduced. Moreover, the government, which is largely responsible for the allocation of financial aid, should do so on the basis of the most appropriate economic criteria, monitoring the implementation of investment closely to lessen the risk that the aid is used on projects with low returns.

The continuing privatisation of the productive system and implementation of competitive management criteria for the public sector should also allow efficiency to be improved.

Lastly, the efforts to restructure agriculture, which have been boosted by the large amount of structural aid, should, in time, yield major gains in

on in Portugal were the adverse effects of bad weather on agriculture, exacerbated by the

productivity and in more efficient markets. Here again, given the amount of funds involved, their allocation and effectiveness have to be monitored closely.

The policies pursued in recent years, and membership of the European Community, have done much to hasten the necessary catching up and structural adjustment of Portugal's economy. The European internal market will provide a continued major stimulus in the same direction.

But the tasks facing the economy are considerable. Per capita income (in terms of its purchasing power parity) is about three-quarters that of Spain and around one-half the average of the eight richest members of the Community; and many of the economy's structural features (particularly in the agricultural sector) are far from those of an advanced industrialised economy.

The potential rewards of integration are immense. So are the challenges. It is understandable, for example, that Portugal should have negotiated the possibility of delaying until 1995 the full lifting of controls on capital movements, even though the government aims to accomplish this goal three years earlier. The liberalisation of the domestic financial sector—and hence the move to market-based techniques of monetary control—would by then have to be largely complete. Membership of the exchange-rate mechanism of the EMS, which would provide a stable framework for the setting of monetary policy, would be a realistic option, provided that Portuguese inflation had come close to the average of existing members and the current account was in reasonable balance.

These moves in the financial sphere will put pressure on the 'real' side of the economy to adjust along market-oriented lines, but adjustment will be efficient only if parallel measures continue to be taken over a wide range to strengthen the markets for goods and services and labour. Here, too, liberalisation within the context of the EEC will play a key role. ■

Source: **OECD Economic Surveys: Portugal**, OECD Publications, Paris, 1989.

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The major contributors to this volume are Professor Kenichi Imai (Japan), Professor Christiano Antonelli (Italy), Richard J. Solomon (United States), and Eric Arnold and Ken Guy (United Kingdom)
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OECD Council Meets at Ministerial Level

Communiqué

The Council of the OECD met on 31 May and 1 June at Ministerial level. The meeting was chaired by Mr Jon Sigurdsson, Minister of Commerce and Industry of Iceland. The Vice Chairmen were Mr Robert Urbain, Minister of International Trade of Belgium, and the Rt. Hon. Joe Clark, Secretary of State for External Affairs, the Hon. John Crosbie, Minister for International Trade, and the Hon. Michael Wilson, Minister of Finance of Canada. Ministers reviewed the general economic situation. They discussed the policy orientations necessary for economic and social progress in the OECD area and the developing countries.

The Council renewed the mandate of the Secretary-General of the OECD, Mr Jean-Claude Paye, for a second period of five years with effect from 30 September 1989. On this occasion Ministers expressed their warmest thanks to Mr Paye for the competence with which he has directed the Organisation during his first mandate.

Moving Ahead from the Achievements of the 1980s

The current economic situation in the OECD area is generally good: activity is robust; inflation has been contained at relatively moderate levels; substantial progress has been made in job creation; and investment is buoyant, reflecting business confidence bolstered by actions taken over the full range of economic policies and the steady strengthening of international economic co-operation.

Despite the achievements of recent years, much remains to be done. To ensure sustained, job-creating, non-inflationary growth OECD governments will:

- resist inflationary pressures, which have recently re-emerged as a problem in many countries
- strengthen the process of reducing large current-account deficits and surpluses, a process which recently has weakened markedly
- reduce unemployment, which remains high in many countries, paying particular attention to the problems of youth and the long-term unemployed
- accelerate the reduction of structural rigidities and distortions within economies and internationally
- establish sound public budgetary positions and promote efficient public management
- improve the structure and level of national saving in many countries and thereby contribute to a sustained buoyancy of productive investment
- reinforce the open multilateral trading system by vigorously pursuing the successful conclusion of the Uruguay Round negotiations in 1990, expanding market access, resisting protectionist pressures in all their manifestations, and refraining from any measure which could damage the multilateral trading system
- improve the protection and management of the environment, particularly through the better integration of economic and environmental decision-making, to ensure sustainable development for current and future generations
- pursue the establishment of strengthened and more operationally effective GATT rules and disciplines as well as substantial progressive reductions in agricultural support and protection resulting in correcting and preventing restrictions and distortions in world agricultural markets, as affirmed in the Uruguay Round framework approach, over an agreed period of time
- strengthen policies supportive of the efforts of developing countries to find viable solutions to the debt and development problems that confront them.

Policy Directions

To meet these challenges and ensure improved economic performance over the next decade, governments will make full use of the policy instruments at their disposal and the synergy among them. The experience of the 1980s shows that implementing measures across the whole range of economic policies and across countries enhances the effectiveness of each specific measure.

Therefore:

- monetary policy will be directed to its primary objective, price stability in a growing economy. This will help create the conditions for stable and sustained growth. In some countries exchange-rate stability is regarded as important in order to maintain domestic price and cost stability
- fiscal policy will aim, where appropriate, to reduce public-sector demands on private saving by continuing the process of consolidation. Governments will also aim to improve the quality and efficiency of both sides of the public-sector accounts by reducing distortions associated with the structure of taxation and by subjecting the level and composition of expenditure to closer scrutiny and better overall control
- governments will step up their actions in critical areas of structural reform to improve steadily the potential of economies, to create additional jobs without an acceleration of inflation and to enhance the effectiveness of macro-economic policies
- international economic co-operation will be intensified in respect of both macro-economic and structural policies in support, *inter alia*, of the external adjustment process
- when member countries enter into or strengthen regional arrangements, they will act in conformity with international obligations and with the objective of strengthening the open multilateral trading system and seek to ensure that the benefits from regional liberalisation and dynamism will accrue not only to the participating countries but also to the world economy at large.

Ministers welcome the report on surveillance of structural policies by the Economic Policy Committee.[1] They endorse its main conclusion that the case is even more compelling than ever before for pressing forward with reform on a broad front. Economic conditions for reform are favourable. In all member countries and in Yugoslavia reform will foster more flexible and efficient markets for labour, capital and products, improve the efficiency of the public sector and enhance the effectiveness of macro-economic policies. Ministers take note of the report by the Secretary-General on the implementation of multilateral surveillance. This contributes to sustaining the momentum of reform. Ministers invite the Secretary-General to continue to develop and strengthen the OECD's surveillance of structural reforms and policies.

Specific economic policy orientations required in individual countries were reviewed and agreed.

To ensure sustained, balanced growth, priorities in the **United States** remain to contain inflationary pressures and to reduce further the current-account deficit. Continued moderation of domestic demand and further decrease of public deficits are of critical importance to achieving these ends. US authorities will continue to monitor wage, price and demand developments closely with a view to taking appropriate action should inflationary pressures not abate in response to policy measures already taken. The US Administration will ensure that the recent measures to reduce the Federal budget deficit to $100 billion in FY1990 agreed between the President and Congressional leaders are fully enacted. Further measures will be taken as necessary to achieve the objective of eliminating it entirely by 1993 as a contribution to the reduction of the savings-investment gap. Moreover, priority attention will be given to dealing with the situation of troubled financial institutions and improving the system of prudential supervision. Furthermore, the US will implement its trade policies in line with the objective of strengthening the open, multilateral trading system.

In both **Japan** and **Germany**, the authorities will continue to pursue prudent but flexible medium-term macro-economic policies and accelerate structural reforms, in order to sustain strong, non-inflationary growth of domestic demand at a level that would promote significantly external adjustment, which recently has weakened.

- In **Japan**, while major reform has recently been achieved to improve the tax systems, further progress will be made in adjusting public revenue and expenditure structures taking into account, *inter alia*, the prospective aging of population. Structural reforms contributing to both price stability and external adjustment will be expedited. These include the removal of legal and other impediments to, as well as the review of taxation of land for, the more efficient use of land. Price competition will be strengthened and market access further facilitated for domestic and foreign participants through reforms in regulatory structures in the distribution and other service sectors. While substantial progress has already been made in the financial sector, financial liberalisation and internationalisation will be continued further. In pursuing these and other measures, Japan will undertake to further improve market access both in goods and services, thereby contributing to a strong expansion of imports.
- **Germany** will continue with the medium-term programme of fiscal consolidation and has embarked upon a policy of major structural reforms, including, *inter alia*, an overhaul of social security systems, a multi-year tax reform, and the reform of the telecommunications sector. Efforts will be encouraged to introduce more flexible arrangements for working time, wage structures and job assignment. Particular attention will be given to improving the conditions for re-employment of those who are suffering from long-term unemployment. There is a need for structural reforms especially in the services sector where regulations and barriers to entry remain significant, such as the transport sector. The flexibility of the economy will be improved by reducing remaining structural impediments in domestic financial markets and through more liberal closing hours in the retail trade. Structural reforms will increase the dynamism of the economy, strengthen economic growth and, by supporting a shift of resources into more domestically oriented sectors, will contribute to the external adjustment process.

Other OECD countries will follow as appropriate similar broad policy orientations, with specific actions reflecting individual country situations. Among the other large OECD economies, immediate priorities are:

- In **France**, the reforms already undertaken to make the economy more competitive will be reinforced by the priority given to an anti-inflation strategy involving, particularly, continued reduction of the budget deficit, competition policy and action to

improve the underlying competitiveness of firms. The remaining foreign-exchange controls will be removed and the process of opening up to foreign investment continued. Control of public expenditure will be intensified, in the light of the consequences for the tax system of the liberalisation of capital movements and the process of fiscal harmonisation in the EC, and the need to ensure that funds are available for current spending priorities, notably research and training.

- In **Italy**, efforts will be stepped up to reduce budget deficits which exert upward pressure on interest rates, contributing to the increase of public debt and adding to inflationary pressures. Italy will also continue efforts to improve the efficiency of its public sector. Co-ordination between the public and private sectors will be improved to contribute to a more efficient allocation of resources. Tax reform will be intensified and thereby will increase resources available to support a sustained growth of investment. Through a variety of measures relating particularly to training and labour markets, Italy will continue to reduce structural disparities between the Centre-North, where overheating exists, and the South, where unemployment remains high.
- In the **United Kingdom**, monetary policy will continue to be directed at reducing inflation. Fiscal policy provides for further repayment of public-sector debt, while moving to a balanced budget over the medium term. Competition will be further encouraged in the provision of various professional services, and through the reform of restrictive trade practices law. Tax reform will continue to promote the improved performance of the economy, notably through further reductions, when practicable, in marginal tax rates. Employment training and educational standards will be further improved. There will be continued review and reform of regulations which are a burden on businesses.
- In **Canada**, priority will be given to following through on the commitments set out in the recent budget: reducing inflation; reducing the budget deficit and controlling the growth of public debt; implementing a broadly based sales tax–the Goods and Services Tax; and reforming the unemployment insurance system to place greater emphasis on human resources development as distinct from income maintenance. The Government will intensify efforts towards the removal of restrictions on inter-provincial trade.
- The **European Communities** programme to complete the internal market in 1992 and improve its economic and social cohesion is progressing steadily and has already given a strong momentum to structural policy reform, investment and growth. These moves are complemented by joint efforts by the European Communities and EFTA countries to deepen and extend their co-operation beyond the current free trade arrangements to create a European Economic Space, and will be in line with the objective of strengthening the open, multilateral trading system.

Financial Markets and Foreign Direct Investment

The continuing liberalisation of financial markets and foreign direct investment is contributing to a more dynamic world economy. Ministers welcome the new impetus given to the liberalisation process by the recent strengthening of the OECD Codes of Liberalisation in the area of capital movements and financial services. The principles that underlie the OECD Codes and other OECD instruments will guide governments as they seek to prevent or reduce international difficulties arising from the existence of different financial systems and different degrees of openness to international competition.

Increasingly integrated securities markets have altered the challenges faced by prudential supervisors. The OECD has been examining the linkages across markets, system risks and the scope for improving the capacity of the system to manage those risks. The goal for the coming years will be to extend significantly international co-operation among supervisory and regulatory bodies in order to ensure the smooth, efficient and flexible working of the financial system.

While progress has been made in reducing the restrictions on inward foreign direct investment and flows have risen sharply, protectionist sentiment, sometimes as a spill-over from tensions in trade, threatens investment flows. In connection with the 1990 Review of the OECD Declaration and Decisions on International Investment and Multinational Enterprises, Ministers re-affirm their determination to resist such protectionism, to maintain an open investment climate and, *inter alia*, to strengthen the OECD National Treatment instrument. The balance that has characterised the Organisation's approach to international investment questions, including that between the different elements of the 1976 Declaration on International Investment and Multinational Enterprises, should continue to prevail.

Labour Markets, Education and Social Policies

The climate for entrepreneurship and job creation has improved, especially in small and new businesses, and moderate wage outcomes have made an important contribution to employment growth in many countries during the past years. Nevertheless, unemployment levels in certain OECD countries remain unacceptably high. Labour-market policies will be strengthened, in particular to fight youth and long-term unemployment, to seek further reduction of labour-market rigidities and to ensure that employment opportunities are fully exploited. Ministers welcome the efforts undertaken in the Organisation to develop a new framework for long-term policies aimed at more job-creating growth, increased functional and geographical mobility and smoother adjustment of the labour force.

A solid basic education, combined with post-compulsory education and training opportunities throughout working life, is essential for each individual to exploit fully employment opportunities. In close co-operation, governments and the private sector must step up efforts to meet these fundamental requirements.

Social protection systems are an essential expression of solidarity and contribute importantly to personal security and dignity, facilitating the acceptance of structural change. To remain viable, these systems must adjust to evolving circumstances and needs. In particular, full use must be made of the contribution they can provide for effectively underpinning labour-

market and human resource enhancement policies.

More generally, social and labour-market policies should aim at the active participation of all groups, particularly the disadvantaged, in the economy and society at large. This will become all the more important as dependency rates rise with aging populations and will require better integration of policies, programmes, entitlements and administrative structures, taking advantage of the signals and incentives provided by the market.

Agriculture

Ministers take note of the joint report by the Agriculture and Trade Committees[2] and endorse its conclusions. Reduced production resulting mainly from the North American drought but also, to some extent, from policy measures, has contributed to the reduction in assistance in 1988 (as provisionally measured by PSE/CSE[3]). In some instances, supply control systems have been effective in reducing production, but they may entail serious economic distortions. The cost of agricultural support for the OECD as a whole imposed on taxpayers and consumers amounted in 1988, according to Secretariat estimates, to approximately $270 billion. This figure is lower than those of 1986 and 1987 but is still above the level of 1985 and previous years. The role of market signals in orienting agricultural production remains insufficient almost everywhere. Trade tensions continue to be acute: market access has improved only in a few cases, and the use of measures affecting export competition, directly and indirectly, remains widespread.

It is therefore more than ever necessary that the process of agricultural reform be pursued vigorously, in conformity with the principles defined by Ministers in 1987 and 1988, and taking advantage of the present strength of markets. The successful completion of the Uruguay Round negotiations will be of decisive importance in this respect. Therefore, in accordance with the framework approach endorsed at the Mid-Term Review, member countries will, in the months ahead, actively engage in substantive negotiations in Geneva (including the tabling of negotiating proposals) and meet their undertakings and stated intentions on short-term measures. Reform should be achieved through mutually reinforcing actions at domestic and international levels leading to a fair and market-oriented trading system through substantial, progressive reductions in agricultural support and protection and strengthened and more operationally effective GATT rules and disciplines.

The Organisation will continue its work on the monitoring of agricultural reform. This will include improving quantitative indicators (e.g., PSE/CSE) and analysis; analysing medium-term market trends and the medium-term impact of specific policies; assessing the scope and limitations of all relevant policy measures, such as supply control and direct income support; and examining the interrelationship between agriculture and the environment. Work undertaken on rural development policies will be actively pursued with a view to contributing to the identification and assessment of the range of actions available to stimulate, in rural areas, economically viable activities which would enhance development and growth in an environmentally sound way.

Industrial Subsidies

Industrial subsidies often present impediments to structural adjustments, distort resource allocation and engender international frictions. Reducing such subsidies is crucial for improving the flexibility of economies and for increasing international trade on a competitive basis. Ministers note the progress on the work in this area, following the mandates given in 1986 and 1987 and agreed to strengthen that work. Priority will now be given to completing the information gathering and reaching early agreement on concepts and methodology for the second phase of the work which will be directed at transparency and assessment of the economic impact of industrial subsidies.

Export Credit Subsidies

Ministers note with satisfaction the progress that has been made in strengthening the multilateral disciplines on trade- and aid-distorting export credit subsidies. This effort must be pursued actively. Ministers invite the competent bodies in the OECD to monitor closely the implementation of the recently updated Export Credit Arrangements and to assess whether their objectives are being met.

Energy

The growth of energy consumption, especially that of oil, risks exerting pressure on oil and energy supplies, with possible consequences for prices, inflation and the potential for economic growth. Therefore strong and continued action, as underlined by Energy Ministers of IEA countries,[4] is necessary to achieve greater energy conservation and efficiency, diversification of supply, improved energy technology and emergency preparedness.

Global Issues

Global interdependence is an increasingly well recognised reality and is leading to intensified efforts to find solutions to problems related to the trade system, the protection of the environment and developing countries.

The Open Multilateral Trading System

The robust economic activity accompanied by strong growth in the volume of world trade over the past year has had only limited effect on the existing large number of trade-restrictive measures and practices. Persisting large external imbalances, as well as delays in structural adjustment, are a source of protectionist pressures and international frictions. Recourse to government intervention and grey-area measures continues to erode the multilateral system. New interpretations of certain trade concepts such as 'reciprocity' and 'unfair trade practices', as well as new approaches implying a degree of balanced bilateral trade, are being increasingly advocated in some quarters. Ministers firmly reject the tendency towards unilateralism, bilateralism, sectoralism and managed trade which threatens the multilateral system and undermines the Uruguay Round negotiations.

Therefore Ministers express their determination to halt and reverse all such

protectionist tendencies and to strengthen the open multilateral trading system. They will fulfill their Punta del Este standstill and rollback commitments, which, *inter alia*, require the avoidance of any trade-restrictive or distorting measure inconsistent with the provisions of the General Agreement and its instruments. They agree to make effective use of the improved GATT dispute settlement mechanism and to make progress in negotiations for further improvements, and they will avoid any discriminatory or autonomous actions which undermine the principles of the GATT and the integrity of the multilateral trading system, in conformity with the standstill commitment mentioned above. They invite the OECD to pursue its monitoring of trade policy developments in member countries including in the fields of dumping and other related measures. In this respect full compliance with the commitment for early notification of all new measures is essential.

These developments underline the need for a successful outcome to the Uruguay Round in order to strengthen multilateralism in international trade in goods and services, and to open markets. The positive results of the Mid-Term Review provide a sound basis for the next phase of the negotiations, for which the work of the OECD will continue to provide analytical and conceptual support. Ministers agree on the necessity to table more specific proposals as soon as possible and to proceed without delay to substantive negotiations on all issues, including the new areas, so as to meet the deadline set for the end of the Round. Ministers re-affirm their determination to press forward and complete the Uruguay Round negotiations in 1990. They call upon all participants, both developed and developing, to make the most constructive contribution possible to a successful outcome.

Environment

Continuing environmental deterioration will threaten the achievement of sustainable economic development and an improved quality of life for all. It is therefore essential that all countries actively participate in confronting the range of environmental problems, including those of a global nature. The OECD countries bear a special responsibility in this respect. The recent series of high-level conferences and meetings make an important contribution to the process of international co-operation.

Given the magnitude, urgency and potential economic, social and ecological implications of environmental problems, all relevant national, regional and international organisations will have to be mobilised in the most effective and efficient way. The OECD will co-operate fully in this process and, building upon the work on environmental problems it has carried out over twenty years, will focus on those aspects where, by nature of its membership and structure, it can make a particular contribution.

Ministers re-affirmed the critical importance of integrating more systematically and effectively environment and economic decision-making, as a means of contributing to sustainable economic development. Taking advantage of its capacity in the field of economic analysis, the OECD will work to place environmental decision-making on firm analytical ground with respect to costs, benefits and resource implications of environmental proposals and initiatives, selection among policy options and, where appropriate, to develop methods to ensure that environmental considerations become an integral part of economic policy-making. Particular attention will be paid to breaking new ground in such areas as: integrating environmental considerations into economic growth models; analysing environment-trade relationships; determining how price and other mechanisms can be used to achieve environmental objectives; assessing the economic costs and benefits of possible responses, including technologies, to cope with atmospheric, climatic, marine and other global environmental problems (in co-ordination with the work carried out in other competent bodies); and elaborating in economic terms the 'sustainable development' concept.

In this respect intensified efforts for technological breakthrough are important to reconcile economic growth and environmental protection. The OECD will examine incentives and barriers to the innovation and diffusion of environmental technologies. It will also promote expanded information exchange on technological options.

Industry also has a central role in confronting the environmental challenges of the 1990s, especially in incorporating environmental concerns into their economic decisions. The OECD will continue to stimulate and support closer co-operation between governments and industry to meet these challenges. Progress is beginning to be made in fields such as waste minimisation, industrial processes that conserve energy and raw materials, the design and marketing of cost-effective 'clean technologies', and the development of an economically viable pollution control and environmental management industry. There will be an expanded effort to analyse the economic dimensions of these activities and trends and promote information exchange on technological innovation and options. The OECD-BIAC[5] Conference on 'Environmental Problems and Industrial Policies in the 1990s' planned for October is an example of this. The agricultural sector also has a central role to play in correcting environmental problems, such as soil erosion and water pollution.

Close co-operation, involving the IEA and the NEA,[6] on the crucial relationship between environment and energy will continue. Integrated policies which further energy security, environmental protection and economic growth are required. In view of increasing evidence of the risk of global warming and climate change and the necessity to respond to this issue, Ministers call for vigilant, serious and realistic assessment on a global basis of what energy policies can contribute to meeting these challenges, and of their economic and social impacts. Member governments should contribute in their energy policies to the solution of international and domestic environmental problems. As identified by IEA Ministers, they pledge to pursue in their respective energy policies greatly improved energy efficiency and conservation, new technologies and, where national decisions so contemplate, the use of nuclear power with maintained and improved safety in construction, operation and waste disposal. The transport sector also has a particular significance for the

environment. The OECD is actively participating in the preparations for an ECMT[7] ministerial meeting on transport and the environment, which will be held in November 1989.

Ministers agree that co-operation with developing countries is essential for the solution of global environmental problems. The OECD will evaluate relevant policy experience in member countries. On the basis of this information the Organisation will seek to co-ordinate policies among member countries with a view to promoting mechanisms for technology transfer to developing countries; the balancing of long-term environmental costs and benefits against near-term economic growth objectives; the design of innovative approaches by development assistance institutions to environmental protection and natural resources management; and the integration of environmental considerations into development programmes, taking into account the legitimate interests and needs of developing countries in sustaining the growth of their economies and the financial and technological requirements to meet environmental challenges. Ministers encourage the development of appropriate environmental appraisal procedures for specific developmental projects and programmes financed directly or indirectly by member governments. They recognise that public awareness of the environmental impact of potential projects is essential.

Developing Countries

The diversity of developing country experience in the 1980s has underlined the importance of individual developing country policies for progress. Sustainable broad-based growth and effective development rely upon policy reforms, carefully related to country situations, aimed at stabilising and liberalising developing economies; strengthening the effectiveness of public administration, the private sector and the role of markets; tackling poverty; and enhancing human resources. The members of the DAC[8] and the multilateral development and financing agencies have been adjusting and differentiating their assistance efforts and modalities to support developing country efforts in these areas. Ministers welcome the review launched by the DAC on major development and aid issues in the 1990s. The results of this work will be submitted to the ministerial meeting in 1990.

Adequate, appropriate and timely financial support is crucial to the success of major economic and social reforms in developing countries. Despite efforts by some DAC countries, the rate of growth in overall concessional aid has slowed down. Ministers express their determination to reverse this trend and to continue to work for improved aid quality. Ministers welcome steps to write off or otherwise remove the burden of ODA[9] loans to the poorest developing countries and urge all donor countries who are able to do so to consider further action along these lines. In addition to their development assistance efforts, the OECD countries have a clear responsibility for promoting an open vigorous international economic environment as an essential contribution to the development process. In this respect, an increase in total net resource flows, including foreign private investment, is also important for developing countries.

Persisting debt problems affect a wide range of developing countries. The key principles of the collaborative debt strategy as it has evolved over the past few years remain valid, with emphasis on the case-by-case approach and support to countries implementing effective growth-oriented reforms. In this context Ministers welcome the recent decisions of the IMF and World Bank Boards, which followed up the agreement in the Interim Committee, to strengthen the debt strategy. Ministers urge all parties to move quickly to build upon these steps. The Paris Club is following up the orientations agreed upon at the Toronto Summit in favour of the poorest and most indebted countries. Co-operative efforts in favour of these debt-ridden countries should be strongly pursued and supported.

Financial modalities are important but they must be buttressed by a wide-ranging set of economic policies in both the OECD and the debtor countries. Sound monetary, fiscal, and structural policies in the OECD countries will help the financial situation of the debtors by sustaining growth and creating conditions favourable to lower interest rates and stronger savings. OECD countries must also use every opportunity to strengthen the open multilateral trade and financial system, press for expanded and free trade with full participation of developing countries, resist protectionism and ensure that their markets are open to the exports of the developing countries.

Co-operation with Non-Members

Ministers welcome the successful launch in the past year of the dialogue with a number of dynamic Asian economies, whose role in the world economy is of growing significance. The initial exchange of views on changing patterns in the global economy and on key areas of common interest in policy-making was constructive. The experience thus far suggests considerable scope for further valuable contacts to identify and discuss issues of emerging importance. Ministers warmly welcome these developments, and endorse efforts to carry the dialogue forward through informal discussions on more specific issues. They call for a report at their meeting in 1990.

Given growing economic and environmental interdependence, Ministers consider it important that the OECD remain attentive to developments in countries in other regions of the world. Possibilities for mutually informative contacts will be carefully examined.

1 June 1989

1. This report identifies nine areas for action: trade policies and the international trading system; agriculture; industrial support policies; international direct investment; financial markets; taxation; competition policy; labour markets; and the public sector.

2. **Agricultural Policies, Markets and Trade: Monitoring and Outlook**, OECD Publications, Paris, 1989.

3. Producer subsidy equivalent and consumer subsidy equivalent.

4. International Energy Agency of the OECD.

5. Business and Industry Advisory Committee at the OECD.

6. The OECD Nuclear Energy Agency.

7. European Conference of Ministers of Transport.

8. Development Aid Committee.

9. Official Development Assistance.

OECD Economic Outlook
Highlights

Moving Ahead from the Achievements of the 1980s

OECD economies are now in substantially better shape than they were at the start of the 1980s.[1] The present upswing is in its seventh year and, in 1988, OECD GNP grew by over 4%, driven in particular by the rapid expansion of investment. Productivity performance has generally improved since the early 1980s. The average OECD rate of unemployment has fallen to 7%, back to where it was in 1981. OECD governments can build on these achievements—the fruits both of the policies implemented in the 1980s and of strengthened international co-operation—to promote sustained, job-creating growth with low inflation over the next decade.

Governments have to tackle a number of remaining and emerging problems to sustain the improvement in economic performance. Inflation has been creeping up and inflationary pressures are a concern in many countries. The reduction of external imbalances has slowed, if not ground to a halt. Exchange rates have recently exhibited more instability than for most of the period following the Louvre Accord, with the dollar moving in a direction which seems inconsistent with adjustment requirements. There has been continuing recourse to trade interventionism. The situation of many indebted developing countries has deteriorated. Unemployment remains high in many OECD countries, with long-term and youth unemployment especially slow to decline. The recent buoyancy of productive investment is welcome but has been accompanied by increases in inflation and interest rates, which point to the importance of higher OECD saving to sustain strong productive investment. In some countries, too, much of private saving continues to be absorbed by government budget deficits. In all countries, despite the progress which has been made, much remains to be done to improve both public expenditure and tax systems.

Dealing with these problems requires action across the full range of policies—monetary, fiscal and structural. Effective international co-operation involves all of them. Monetary policy has been tightened considerably in response to inflationary pressures in the OECD area. While monetary authorities will wish to avoid excessive tightening, which would precipitate a downturn, they must nonetheless remain vigilant. In many countries continued reduction of fiscal deficits is necessary. This applies particularly to countries like the United States, where large budget deficits accompanied by high current-account deficits point to the importance of increasing national saving. Further structural reforms on a broad front are likewise required to strengthen the growth and employment capacity of economies and to facilitate adjustment. Here the most pressing international priority is to use the Uruguay Round effectively—to reinforce the open multilateral trading system and to reduce the high costs and inefficiencies of present agricultural policies. On the domestic side, particular importance attaches to public-sector reform and to continued improvements in the functioning of labour markets, in part by moving further toward systems of education and training better adapted to the requirements of the workforce.

Present Challenges and Broad Policy Responses

Containing and Reducing Inflation

OECD growth was buoyant and widely spread in 1988; area GNP rose by over 4% (Table 1) with private non-residential investment and international trade expanding particularly vigorously, at rates over 10%. The strength of demand contributed to a pick-up of OECD inflation, which has increased by a full percentage point over the past year; it is now running at around 4½% at an annual rate (Table 2). The most pressing task of policy is therefore to continue to counter the revival of inflation lest it gather further momentum. This task, the main weight of which falls on monetary authorities, will require particular vigilance in the coming months.

Monetary policies have tightened, with short-term interest rates in the major countries now on average about 3 percentage points higher than a year ago, and there are indications in some countries of an easing of demand growth. The OECD projections embody the view that monetary tightening has been broadly sufficient to cause output growth in the area to moderate and inflation to stabilise. Specifically, growth is projected to slow to a little over 3% this year and a little under that in 1990. Average inflation could then remain at around 4½% over the next twelve months and ease very slightly in the second half of 1990.

There is considerable uncertainty, however, about the underlying strength of demand and inflationary pressures, and about the extent and timing of the effects of monetary tightening. Indeed, inflation could rise a little further before subsiding in

1. **OECD Economic Outlook**, No. 45, OECD Publications, Paris, June 1989.

Table 1
GROWTH OF REAL GDP/GNP IN THE OECD AREA[1]
seasonally adjusted at annual rates (%)

	Share in total OECD 1987	change from previous year				change from previous half-year				
		1987	1988	1989	1990	1988 II	1989 I	1989 II	1990 I	1990 II
United States	36.1	3.4	3.9	3	2 1/4	2.6	3 3/4	2	2 1/4	2 1/4
Japan	19.0	4.5	5.7	4 3/4	4 1/4	4.5	4 3/4	4 1/4	4 1/4	4
Germany	9.0	1.8	3.4	3	2 3/4	2.5	3 1/2	2 1/4	3 1/4	2 3/4
France	7.0	1.9	3.4	3	2 3/4	2.9	3 1/4	3	2 1/2	2 1/2
Italy	6.0	3.0	3.9	3 1/2	3 1/4	2.0	4	3 1/2	3 1/4	3
United Kingdom	5.4	4.6	3.7	2 1/4	2	1.6	2 3/4	2 1/4	2	2
Canada	3.3	4.0	4.5	3 1/4	2 1/4	3.5	3 3/4	2	2 1/2	2 1/2
Total of above countries	85.8	3.4	4.2	3 1/4	2 3/4	3.0	4	2 3/4	2 3/4	2 3/4
Other OECD countries	14.2	3.0	3.3	3 1/4	2 1/2	3.9	3	2 3/4	2 1/2	2 1/2
Total OECD	100.0	3.4	4.1	3 1/4	2 3/4	3.1	3 3/4	2 3/4	2 3/4	2 3/4
Four major European countries	27.4	2.6	3.6	3	2 3/4	2.3	3 1/2	2 3/4	2 3/4	2 1/2
OECD Europe	39.8	2.7	3.5	3	2 3/4	2.9	3 1/4	2 3/4	2 3/4	2 1/2
EEC	34.3	2.7	3.5	3	2 3/4	3.0	3 1/4	2 3/4	2 3/4	2 3/4
Total OECD *less* the United States	63.9	3.3	4.2	3 1/2	3	3.4	3 3/4	3 1/4	3 1/4	3
Industrial Production:										
Major seven countries	-	3.4	6.3	4 1/4	3	6.1	4	3 1/4	3	3
Total OECD	-	3.2	5.9	4 1/4	3	5.6	4	3 1/4	3	3

Other OECD Countries

	Share in total OECD 1987	% change from previous year			
		1987	1988	1989	1990
Austria	0.9	1.5	4.2	3	2 1/2
Belgium	1.1	2.1	4.2	3 1/4	2 3/4
Denmark	0.8	-0.7	-0.2	1/2	1 1/2
Finland	0.7	3.8	4.8	3	2 1/4
Greece	0.4	-0.4	3.5	3 1/2	2 3/4
Iceland	0	8.7	-1.4	-1 1/2	1 3/4
Ireland	0.2	4.7	0.4	4 1/2	3 1/4
Luxembourg	0	2.7	5.2	3 1/2	2 3/4
Netherlands	1.7	1.4	2.7	3 1/4	3
Norway	0.7	3.4	2.6	4 1/2	2 1/2
Portugal	0.3	4.7	4.1	3 1/2	3 1/4
Spain	2.3	5.5	5.0	4 3/4	4
Sweden	1.3	2.4	2.1	1 3/4	3/4
Switzerland	1.4	2.3	3.0	2 1/2	2 1/4
Turkey	0.5	7.4	3.4	3 1/4	4 1/2
Total of above countries	12.4	2.9	3.3	3 1/4	2 3/4
Australia	1.6	4.5	3.8	3 1/4	1 3/4
New Zealand	0.3	-0.1	0.3	1 1/2	1 3/4
Total of above 17 countries	14.2	3.0	3.3	3 1/4	2 1/2

1. Aggregates were computed on the basis of 1987 GNP/GDP weights expressed in 1987 US dollars.

response to earlier policy actions. Some patience may therefore be called for to avoid excessive tightening, which would precipitate a downturn. If, however, there were indications in the coming months that inflationary pressures were stronger than now perceived, further prompt monetary tightening would be required. Timely responses would then be especially important in economies where inflation has moved up to uncomfortably high rates. The costs later on would be higher if, as a result of erring on the side of ease in setting monetary policies, rising inflation became built into expectations.

For many countries, merely to prevent an increase of inflation would be to fall well short of stated medium-term objectives. For 1990, the projections are for price increases of above 4% in the United States, Italy, the United Kingdom, Canada, Australia, Finland, New Zealand, Portugal, Spain and Sweden, and much higher in Greece, Iceland and Turkey. In all of these countries, and perhaps others, monetary policies are likely to have to continue bearing down on inflation if there is to be a trend toward price stability over the medium term. In many of them, additional budgetary stringency would also seem to be called for in the medium term since deficits are still too large and debt/GNP ratios have not yet been stabilised. Speeding up budgetary adjustment would reduce the pressure of demand. It would thereby relieve some of the burden on monetary policy, which could then rein in inflation at nominal and real interest rates lower than would otherwise be possible. Budgetary adjustment would also contribute to external adjustment in countries with large current-account deficits.

Responding to Exchange-market Pressures

Authorities in the major countries continue to share a strong interest in monetary co-operation to avoid large, abrupt exchange-rate changes, and to keep rates from moving to levels that would result in price competitiveness clearly out of line with the objective of reducing current-account imbalances (Table 3). Pressures in exchange markets could strain international co-operation in pursuit of this common interest if the required monetary response were to conflict with the domestic objectives of monetary policies. Such pressures have been strong from time to time over the past year. Nonetheless, monetary tightening in response to exchange-rate weakness and the associated risk of imported inflation has been consistent thus far with domestic requirements. Future exchange-rate changes are a matter of speculation, but either the continuation of recent strength of the US dollar or the emergence of strong and persistent downward pressure on it could sharpen policy dilemmas.

Upward pressure on the dollar has emerged despite relatively high inflation and a large current-account deficit in the United States. Similar pressure on the UK pound sterling and some other currencies was also evident earlier, as investors were attracted by relatively high nominal interest yields. While currency appreciation would provide some temporary price relief for the United States, this could prove short-lived—as it did for sterling. If, on the other hand, the strength of the dollar should persist, the resulting loss of international cost and price competitiveness would go in the wrong direction for current-account adjustment. The US authorities would, however, have little scope

Bundesbildstelle, Bonn

'For many countries at present in current account deficit, raising national saving would seem preferable to squeezing investment.'

for easing monetary policy to prevent an appreciation, given the importance of restraining domestic wage and price pressures. At the same time, authorities in low inflation countries (Japan, Germany and most other EMS countries) could face the threat of higher inflation through import-price increases while considering that further monetary tightening to ward off a fall in the exchange rate would go beyond what was called for on domestic grounds.

A shift in market sentiment against the dollar, perhaps associated with a renewed focus on inflation performance and trade developments, would pose different problems. A large, abrupt decline of the dollar, while contributing to current-account adjustment, would make the immediate task of controlling inflation more difficult for the US monetary authorities: this might be achieved only at the cost of pushing interest rates to levels that would jeopardise activity. Nevertheless, the burden of a monetary response in such a situation would be likely to fall mainly on the US authorities. Japanese and German authorities might welcome the easing of price pressures that would accompany an appreciation of their currencies. In any event, if their economies were still growing robustly with consequent domestic inflation risks, authorities in countries whose currencies were subject to upward pressure might be reluctant to ease monetary policy in order to limit the appreciation of their currencies. And such action might be less effective once market sentiment had shifted.

These alternative possibilities point to the importance of co-operative actions across the full range of policies in order to minimise the risks of exchange-rate pressures getting out of hand. Co-ordination of monetary policy actions can help to contain erratic speculation in markets; so, too, can co-ordinated intervention in exchange markets in support of a

Table 2

PRIVATE CONSUMPTION DEFLATORS IN THE OECD AREA[1]

percentage changes; seasonally adjusted at annual rates

	1987	1988	1989	1990	1988	1989		1990	
					II	I	II	I	II
United States	4.5	4.2	5	5 1/4	4.8	5	5 1/4	5 1/4	5 1/4
Japan	-0.1	0	2	2 3/4	1.3	2	2 3/4	2 3/4	2 1/2
Germany	0.6	1.3	3	2 3/4	1.6	3 3/4	3	2 3/4	2 1/2
France	3.1	2.7	3 1/2	2 3/4	3.2	3 1/2	3 1/2	2 3/4	2 1/2
Italy	5.1	5.0	5 3/4	5	4.8	6 1/2	5 1/4	5	4 3/4
United Kingdom	3.8	5.0	5 3/4	5 1/4	5.9	5 3/4	5 1/2	5 1/4	5
Canada	3.7	3.4	4 1/4	4 1/4	3.6	4 1/2	4 3/4	4	4
Total of above countries	2.9	2.9	4	4 1/4	3.6	4 1/4	4 1/4	4 1/4	4
Other OECD countries[2]	5.7	6.6	7 1/4	6 3/4	7.2	7 1/4	7 1/4	6 3/4	6 1/4
Total OECD	3.3	3.4	4 1/2	4 1/2	4.1	4 1/2	4 3/4	4 1/2	4 1/4
Four major European countries	2.9	3.2	4 1/4	3 3/4	3.6	4 3/4	4	3 3/4	3 1/2
OECD Europe	3.6	4.3	5 1/4	4 3/4	4.7	5 1/2	5	4 3/4	4 1/2
EEC	3.1	3.4	4 1/2	4	3.8	4 3/4	4 1/4	4	3 3/4
Total OECD *less* the United States	2.7	3.0	4 1/4	4 1/4	3.7	4 1/2	4 1/2	4	4

Other OECD Countries

	1988	1989	1990
Austria	1.5	3	3
Belgium	1.2	3	2 1/2
Denmark	5.1	4 1/4	3 1/2
Finland	4.4	5 1/2	6
Greece	13.8	14 1/2	15
Iceland	25.4	20	15
Ireland	2.2	3 3/4	3 1/2
Luxembourg	1.4	2 3/4	2 1/2
Netherlands	0.8	2	2 3/4
Norway	6.1	4 1/4	4
Portugal	10.0	10 1/4	8 1/2
Spain	5.1	6	5 1/2
Sweden	6.0	7 1/4	6 3/4
Switzerland	2.0	3 1/4	3 1/2
Turkey	62.0	60	53
Total of above countries	6.5	7 1/4	6 3/4
Australia	6.9	6 1/2	6
New Zealand	6.1	6	5
Total of above 17 countries	6.6	7 1/4	6 3/4

1. Aggregates were computed on the basis of 1987 GNP/GDP weights in 1987 US dollars.

2. Half-yearly data must be interpreted with care.

common official view on the objectives. But these are not substitutes for widening and reinforcing actions in the fiscal and structural domains to deal with the underlying conditions which make the present situation fragile—rising and differential inflation rates, and large external imbalances.

Aligning Competitiveness

International monetary co-operation among the major countries since the Plaza Agreement in September 1985, and for a decade within the EMS, has had as an objective the establishment and maintenance of broadly aligned international competitive positions among countries. The challenges of achieving this aim go beyond the difficulties of managing exchange rates discussed above. Exactly what pattern of real exchange rates is consistent with this objective is highly uncertain—especially following large exchange-rate changes, which have altered relationships of cost and price competitiveness, with substantial short-run effects on patterns of trade, but with longer-term effects that have yet to be observed. Nonetheless, appreciation of the dollar and depreciation of the yen and mark beyond recent levels would seem inconsistent with an appropriate alignment of international competitive positions. It is unclear whether a decline of the dollar, by an amount that would take exchange rates out of ranges which have been observed since the Louvre Accord two years ago, will be required. This may ultimately prove to be the case, especially if current inflation differentials persist.

Changes in competitiveness are not just a matter of nominal exchange rates. Depreciation is not a substitute for maintaining a stable, low-inflation environment: its effects do not last when control of domestic demand growth is lax. Trade performance also depends on structural conditions conducive to productivity growth and to the effective exploitation of opportunities in markets for tradable goods and services.

Broad alignment of competitiveness among countries is a necessary condition for sustainable external and internal balance, but it is not sufficient. Large current-account imbalances correspond to large imbalances between saving and investment within countries. Changes in competitiveness lead to adjustment of external imbalances only in so far as they are accompanied by adjustment of these internal imbalances. And so long as the latter remain large, it is difficult to assess whether or not relative costs and prices are out of line. The external and internal perspectives on adjustment of imbalances are taken up below.

Moving to Sustainable External Balance

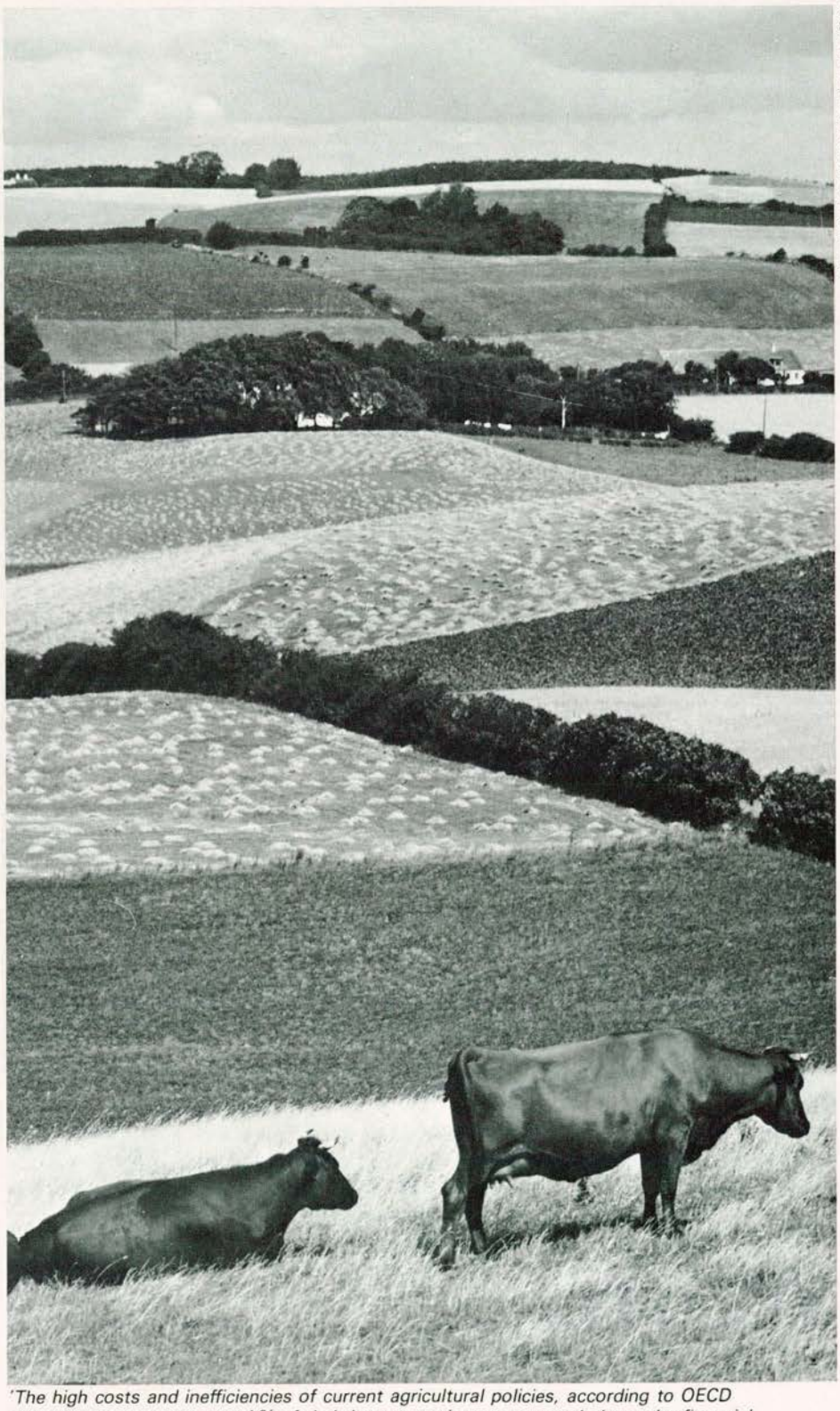
Adjustment of the large and now long-standing current-account surpluses of Japan and Germany appears to have stalled, and while the adjustment of the US deficit has continued, the pace has slowed. A modest further contraction of the US current-account deficit is projected as the growth of domestic demand slows—from $130 billion in the second half of 1988 to some $115 billion in the second half of 1990 (about 2% of GNP). Over the same period, however, the Japanese surplus is projected to remain in the range of $80–85 billion (2¾% of GNP), and the German surplus could widen to over $50 billion (more than 4% of GNP). Large surpluses are also likely to persist in Belgium-Luxembourg, the Netherlands and Switzerland, while sizable deficits are projected either to persist or to start building up in the United Kingdom, Canada, Australia, Finland, Greece, Iceland, Portugal, Spain and Sweden.

In most of the deficit countries named above, the current account is a further signal, in addition to that given by domestic inflation, of the importance of restraining demand in the

short-term. More generally, and taking a medium-term view, persistent current-account deficits pose questions as to what can be considered as sustainable and acceptable patterns of current accounts for OECD countries, and how policies can contribute to orderly adjustment when developments diverge from those patterns. Both structural and medium-term macro-economic policy issues are involved.

Assessing the likely sustainability of a given pattern of current balances has become increasingly difficult. In the more open international financial environment of the past decade, current-account imbalances have proved financeable on a larger scale, and for longer, than would have been expected earlier. Nevertheless, it would seem prudent to assume that there are limits to the willingness of markets to sustain financial flows corresponding to persistent external surpluses and deficits, which are building up very large international debtor and creditor positions. Beyond these limits, exchange rates and interest rates could come under sharp pressure, and this in turn could disrupt sustained growth. The risk here depends on the accompanying economic policies and trends. For example, a country in deficit that maintains low and stable inflation is likely to sustain capital inflows more easily than one in which confidence in sustained price stability is lacking. Strong investment performance, leading to growth of competitive capacity in markets for tradable goods as evidenced particularly by solid export growth, even if imports are also expanding, would also make for a more sustainable deficit. By contrast, external deficits that reflect a low private saving rate, large government budget deficits, or poor performance on the export side are likely to prove less sustainable.

These considerations, which may influence the willingness of markets to finance external deficits, are also



Royal Danish Ministry for Foreign Affairs

'The high costs and inefficiencies of current agricultural policies, according to OECD estimates, cost consumers 1% of their income each year over and above the financial benefits to farmers.'

Table 3
CURRENT BALANCES OF MAJOR OECD COUNTRIES
$ billion; seasonally adjusted at annual rates

	1987	1988	1989	1990	1988 II	1989 I	1989 II	1990 I	1990 II
United States	-154.0	-135.3	-123	-116	-129.0	-125	-120	-118	-115
Japan	87.0	79.6	80	83	81.1	81	80	82	84
Germany	45.2	48.5	48	53	48.2	47	49	51	54
France	-4.1	-3.8	-5	-4	-9.9	-5	-5	-4	-5
Italy	-1.0	-4.0	-8	-10	-4.9	-8	-9	-9	-10
United Kingdom	-4.8	-26.1	-28	-28	-31.3	-29	-26	-27	-29
Canada	-8.0	-9.1	-10	-12	-10.6	-10	-10	-11	-12
Total of above countries	-39.6	-50.3	-45	-34	-56.4	-49	-42	-37	-32
Other OECD countries	-9.3	-11.6	-23	-22	-13.1	-22	-23	-23	-21
Total OECD	-48.9	-61.8	-68	-57	-69.4	-71	-65	-60	-53
Four major European countries	35.3	14.6	7	10	2.1	5	9	10	10
OECD Europe	36.6	14.6	-2	-1	2.3	-3	-1	-1	-1
EEC	37.7	16.6	1	1	5.6	0	1	1	1
Total OECD *less* the United States	105.1	73.5	55	59	59.6	54	55	57	61

Other OECD Countries

	1987	1988	1989	1990
Austria	-0.2	-0.5	-3/4	-1
Belgium-Luxembourg	2.9	3.1	2 3/4	2 3/4
Denmark	-3.0	-1.8	-1 1/2	-1 1/4
Finland	-1.9	-3.0	-4 1/4	-5 1/4
Greece	-1.2	-1.0	-1 3/4	-2 1/4
Iceland	-0.2	-0.3	-1/4	-1/4
Ireland	0.4	0.6	1/2	1/2
Netherlands	2.9	5.3	3 1/4	4 3/4
Norway	-4.1	-3.7	3/4	3 1/2
Portugal	0.5	-0.6	-1 1/2	-2 1/4
Spain	0	-3.6	-8 1/4	-11
Sweden	-1.0	-2.5	-3	-3 1/2
Switzerland	7.2	6.4	5 1/4	4 3/4
Turkey	-1.0	1.5	-3/4	-1/2
Total of above countries	1.2	0	-9 1/2	-11 1/4
Australia	-8.8	-10.8	-12 3/4	-10 3/4
New Zealand	-1.7	-0.8	-1/2	-1/4
Total of above 17 countries	-9.3	-11.6	-22 3/4	-22 1/4

appropriate guides to official attitudes towards persistent deficits: where good use is being made of inflows of funds to augment productive investment and strengthen the international competitive position of a country, a current-account deficit may be viewed not only as tolerable, but also as making a positive contribution to its future economic development. On the other hand, performance which does not meet these conditions will limit the size of the deficits which countries can run, or would choose to run, over the medium term.

If external adjustment is required, it must be consistent across countries: obviously, deficits cannot shrink without surpluses narrowing or deficits widening elsewhere. Hence adjustment policies are intrinsically an area for international co-operation.

Improving Domestic Balances and Structures

An unsustainable pattern of external balances is a reflection of domestic problems, structural as well as macroeconomic. These can be seen in imbalances between national saving and investment, and in difficulties in shifting resources between activities directed towards home and foreign markets. Hence, policies to redress imbalances should extend to fiscal and structural measures.

For many countries at present in current-account deficit, raising national saving would seem preferable to squeezing investment. The latter would slow the growth of productive potential and run counter to the objective of strengthening competitiveness. While there is no rigid link between changes in fiscal balances and in national saving or current-account positions, reduction of a structural budget deficit will normally have some net positive impact on these. Thus, where government budgets are in deficit, eliminating this drain on saving provides clear scope for action. Even where the budget is in surplus, a large external deficit reflecting low private saving is a reason to maintain a cautious budgetary strategy. At the same time, reducing deficits would be counter-productive if it were done in ways that added substantially to disincentives for private saving, as some forms of tax increases could. How a budget deficit is cut matters.

Over the medium-to-longer term, reducing disincentives to save arising from the structure of taxation would reinforce budgetary policy in fostering adjustment. It is also important, especially for countries in external deficit, to ensure that the environment in which investment takes place is one in which resources are allocated to their most productive uses, thereby enhancing competitiveness in world markets. Recourse to protection would be counter-productive because it would build in new rigidities and draw resources into inefficient activities.

Countries with large current-account surpluses can contribute to adjustment by removing structural impediments to investment in non-tradable sectors and by implementing structural changes which support the growth of domestic demand. Relaxing budgetary discipline in these countries would go in the wrong direction from the standpoint of sustained economic performance of the economies concerned and of the world economy. Domestically, these countries face rising social security transfers, which will strain government finances in coming years, and globally there is a call for strong saving. The field for action is nevertheless broad–including improved functioning of capital markets; the removal of financial and regulatory impediments to housing construction and ownership; and the reduction of regulatory burdens on firms undertaking new investment and seeking to establish themselves in markets, especially in domestically oriented service sectors.

Countries in surplus also bear a special responsibility, not only to open their markets completely and to foster a domestic market environment that provides full scope for the marketing

of imports, but also to be seen to be doing these things. Removal of subsidies to domestic producers when there are potential competitors in other countries is part of this responsibility. Trade liberalisation policies, like other structural reforms, would contribute to adjustment by raising real incomes and therefore spending in surplus countries.

Fostering a Full Range of Structural Reforms

Strengthening the international adjustment process is only one aspect of structural reform. More fundamentally, such action is required to improve domestic economic performance over the coming decade and beyond. Reforms can contribute to high employment, strong productivity growth and efficiency. Present signs of inflation in economies where unemployment is still high (Table 4) underscore the importance of micro-economic policies and their complementarity with macro-economic policies in pursuing the economic goals of governments. The broad requirements are to foster more flexible and efficient markets for labour, capital and products, and to improve the functioning of the public sector.

Problems and priorities differ across countries, but there are important common tasks. One is to maintain and extend the open multilateral trading system, through agreement in the Uruguay Round negotiations on ways to resolve the problems and curtail the practices that are eroding it. The world trading community cannot afford to squander this timely opportunity. A second priority, partly in the context of the Uruguay Round, is to tackle the high costs and inefficiency of current agricultural policies, which the OECD estimates cost consumers 1% of their income each year over and above the financial benefits to farmers. A third is to reduce industrial subsidies in order to improve the flexibility of economies and expand international trade on a competitive basis. A fourth is to improve the functioning of labour markets, in part by moving further towards systems of education and training that better meet the requirements of the workforce, including those trapped in long-term unemployment. A fifth is reform of the public sector. The last two are linked in a number of countries where it is in the public sector that labour-market problems are particularly troublesome.

Requirements of Individual Countries

Policy in the **United States** must aim to control inflation and to continue to correct a situation in which the Federal budget deficit preempts the lion's share of net private saving in that economy. Wage, price and demand developments have to be monitored closely with a view to maintaining monetary conditions conducive to the steady easing of inflationary pressure. Over the medium term, inflation should be put back on a trend toward price stability. Reducing public-sector pressure on resources will contribute to this and help to lower the current dependence of US private investment on foreign saving. It is therefore a matter of urgency that specific measures be enacted to achieve the stated objective—namely, steady reductions of the Federal budget deficit leading to its elimination by 1993. The recently announced agreement between the President and Congressional leaders on a budget package for Fiscal Year 1990 seems modest in respect of this objective. Substantial further action is likely to be required to meet the targets in the Balanced Budget and Deficit Control Act for a deficit of $100 billion in FY 1990 and for further reductions in subsequent years. Budgetary adjustment should fall as far as possible on expenditure; and to the extent that tax measures are involved, these should be designed to favour saving over consumption.

There are two clear directions for structural reform in the United States. First, action is required to clear up the situation of troubled financial institutions and to improve the system of prudential supervision. Second, a visible and firm commitment to trade and investment policies would strengthen the principle of multilateralism and contribute to the successful conclusion of the Uruguay Round negotiations. It is especially important for the US authorities to refrain from any action which might threaten the integrity of the GATT system.

In **Japan**, the task ahead is to maintain strong non-inflationary growth of domestic demand; this would promote both higher living standards and external adjustment. A gradual appreciation of the yen, in line with developments in competitiveness over time, would contribute to the achievement of these domestic and external goals. If downward pressure on the yen were to persist, it would complicate the task. Co-ordinated, timely action in the exchange market may help to counter such pressure in the short run, but the key to market confidence in the yen is the resolve of the monetary authorities to take action to keep inflation low. Fiscal policy, while maintaining its present overall neutral stance, should continue to be geared to the medium-term objective of adjusting tax and expenditure structures, enhancing public-sector efficiency and providing for the growing requirements of the rapidly aging population.

Further structural reforms, which would contribute to price stability and adjustment, should be expedited. These include the removal of legal, tax and other impediments to the more efficient use of land. Price competition can be strengthened and imports facilitated through regulatory reforms to improve market access

further for new participants—both domestic and foreign—in the distribution and other service sectors, such as transport and telecommunications.

Policy in **Germany** should involve a continued pursuit of the medium-term macro-economic policy objectives, together with an acceleration of structural reforms, in order to sustain strong non-inflationary growth of domestic demand and to promote external adjustment. The task of monetary policy is to contain inflation at low rates. This implies resisting currency depreciation that threatens to add to inflation. A reversal of the downward movement of the exchange rate should be welcomed as it would not only contain the risk of imported inflation, but also help in reducing the current external surplus over the medium term. In the fiscal domain, the medium-term programme of expenditure restraint and tax reform ought to continue, including the income-tax cuts planned for 1990.

Structural reform would help to promote the desired shifts of resources into more domestically oriented private sectors. There is obvious scope for action in service sectors, where regulations and barriers to entry continue to restrict efficiency, flexibility and entrepreneurship. A prime candidate for reform is transport, where market access, fares and capacities are heavily regulated—with adverse effects on the price and quality of service. Removing certain unduly restrictive requirements of statutory qualification in some craft trades could stimulate the start-up of small firms and competition. Liberalising closing hours in retail trade—beyond the recent modest moves—would make for better use of existing capacity and allow consumers more flexibility. Less rigid state and local land-use regulations, together with reduced administrative delays and obstacles, would have a favourable impact on construction activity. Reducing subsidies to traditional industries would not only speed up external adjustment but would also support current efforts to introduce more flexible arrangements for working time, wage structures and job assignment. Reducing remaining structural rigidities in domestic financial markets, in particular those which keep costs of financial services high,

Léo Jouan/OECD

'The strength of demand contributed to a pick-up of OECD inflation, which has increased by a full percentage point over the past year; it is now running at around 4½% at an annual rate.'

Table 4
UNEMPLOYMENT IN THE OECD AREA
national definitions

	1987	1988	1989	1990	1988 II	1989 I	1989 II	1990 I	1990 II
Unemployment rates (%) [1]									
United States	6.2	5.5	5 1/4	5 1/2	5.4	5 1/4	5 1/2	5 1/2	5 3/4
Japan	2.9	2.5	2 1/4	2 1/4	2.5	2 1/4	2 1/4	2 1/4	2 1/4
Germany	7.9	7.9	7 1/2	7	7.9	7 1/2	7 1/4	7	7
France	10.5	10.1	10	10 1/4	10.1	10	10	10	10 1/4
Italy	11.0	11.0	11	11 1/2	11.0	11	11 1/4	11 1/4	11 1/2
United Kingdom	10.2	8.2	7	7 1/4	7.6	7 1/4	7	7 1/4	7 1/2
Canada	8.9	7.8	7 3/4	7 3/4	7.9	7 3/4	7 3/4	7 3/4	7 3/4
Total of above countries	6.9	6.3	6	6 1/4	6.2	6	6	6 1/4	6 1/4
Other OECD countries	11.0	10.8	10 3/4	10 3/4	10.8	10 3/4	10 3/4	10 3/4	10 3/4
Total OECD	7.8	7.3	7	7 1/4	7.2	7	7	7	7 1/4
Four major European countries	9.9	9.2	8 3/4	9	9.1	8 3/4	8 3/4	8 3/4	9
OECD Europe	10.5	10.1	9 3/4	9 3/4	10.0	9 3/4	9 3/4	9 3/4	9 3/4
EEC	10.8	10.2	9 3/4	9 1/2	10.0	9 3/4	9 1/2	9 1/2	9 3/4
Total OECD *less* the United States	8.5	8.1	7 3/4	7 3/4	8.0	7 3/4	7 3/4	7 3/4	8
Unemployment (millions)									
North America	8.6	7.7	7 3/4	8	7.7	7 1/2	7 3/4	8	8 1/4
OECD Europe	18.7	18.1	17 3/4	17 3/4	17.9	17 3/4	17 3/4	17 3/4	18
Total OECD	29.7	28.0	27 1/2	28 1/4	27.8	27 1/4	27 1/2	28	28 1/4

Other OECD Countries

%	1987	1988	1989	1990
Austria	3.8	3.5	3 1/4	3
Belgium	11.1	10.0	9 1/2	9
Denmark	7.8	8.6	9 1/2	9 3/4
Finland	5.1	4.5	3 3/4	3 3/4
Greece	7.4	7.6	7 3/4	8
Iceland	0.5	1.0	1 1/4	3/4
Ireland	17.5	16.7	15 1/2	15
Luxembourg	1.6	1.4	1 1/4	1 1/2
Netherlands	8.7	8.3	8	8
Norway	2.1	3.2	4 1/4	4
Portugal	7.1	5.6	5 1/2	5 1/2
Spain	20.5	19.5	18 1/4	17 1/4
Sweden	1.9	1.6	1 1/2	1 3/4
Switzerland	0.7	0.7	3/4	3/4
Turkey	15.2	15.9	16 3/4	17 1/4
Total of above countries	11.5	11.3	11 1/4	11 1/4
Australia	8.0	7.1	6 1/2	7
New Zealand	4.1	6.0	7	7 1/2
Total of above 17 countries	11.0	10.8	10 3/4	10 3/4

1. *As percentage of labour force.*

would contribute to a better balance of saving and investment.

France, Italy, United Kingdom, Canada: in three of these countries at any rate, controlling inflation is an immediate policy priority—France perhaps being the exception. Monetary policy tightening has gone furthest in the United Kingdom in order to halt and reverse a revival of inflation—in part by supporting sterling. In Canada, a sharp tightening of monetary policy and the associated currency appreciation have limited the acceleration of inflation. In Italy, monetary policy has also been tilted against inflation, which may subside slightly as the impact of recent indirect tax increases wanes. In all three countries, however, inflation is likely to remain high. Monetary policy will therefore have to stand ready to do more to contain it, although the burden on monetary authorities could be reduced through appropriate structural reforms, in particular those aimed at increasing the growth and flexibility of supply and at reducing the pressure of government spending on available resources over the medium term.

For Italy and Canada fiscal action should also extend to determined efforts to reduce budget deficits. In Italy, part of the unexpected buoyancy of revenues last year was dissipated. While the recent Canadian budget involves both expenditure restraint and revenue increases, the deficit may still widen. In both countries, increasing interest payments on the public debt continue to retard budget consolidation. The decision by the UK authorities to delay reduction of the budget surplus will contribute to reducing current pressure on resources and containing the current-account deficit, in part by boosting levels of national saving that are somewhat low in relation to investment.

A continuation of cautious macroeconomic policies is also necessary in France if inflation and external pressures are not to re-emerge. Such policies, together with ongoing structural reforms, will support further development of the capacity to be internationally competitive in the context of exchange-rate stability within the EMS. Actions already undertaken could be reinforced by further cuts in industrial subsidies, reductions in non-tariff barriers, and strengthened competition policy. The opportunity provided by the impending requirement to remove remaining foreign-exchange controls and to harmonise the tax system in the light of the 1992 programme also has to be fully exploited. With revenue losses likely in capital and indirect taxation, and given announced spending priorities in certain fields, budgetary control over other types of expenditure will have to be tight. Reforms aimed at improving labour-market flexibility could build on the success already achieved and, together with other structural reforms, make inroads into persistent unemployment.

The United Kingdom has been active in implementing structural reforms throughout the 1980s, but the recent pick-up in inflation and sharp deterioration of the current account point to the importance of strengthening further the supply response of the economy. Specific areas for action could include increasing the efficiency of the labour market, which is still characterised by substantial rigidities; improving employment training and addressing deficiencies in educational standards; further encouraging competition in professional services; enhancing regional mobility of both labour and capital; and going further to promote a more neutral tax treatment of household saving and housing invest-

ment in the current environment of liberalised financial markets.

Improved flexibility and better supply conditions will also be required to reduce high unemployment in Italy and to maintain the capacity of the Canadian economy to create jobs at a sufficiently brisk pace to absorb the rapid growth of the labour force. The most pressing micro-economic requirement in Italy is to increase job mobility between the Centre-North, where there is overheating, and the South, with its high unemployment rate. Significant local labour-market disparities should be better reflected in relative wages. Further improvements in co-ordination between the public and private sectors could help to reduce the gap in productivity across regions and contribute more generally to the efficient allocation of resources. More broadly, the size and efficiency of the public sector are major concerns in Italy. In Canada, priority areas for structural reform are the prompt implementation of the broad-based, multi-stage sales tax recently announced; reform of the unemployment insurance system to place more emphasis on the development of human resources as distinct from income maintenance; and removal of restrictions on inter-provincial trade.

Other OECD countries generally have to ensure that inflation is controlled and the structures of their economies are sufficiently flexible to maintain international competitiveness over the medium term. Specific problems and policy requirements differ, but certain similarities within groups of countries, and with the situations in one or other of the larger countries, can be identified. Thus, **Australia**, **Sweden** and **Finland** share with the United Kingdom a concern about inflation (or about the risk of its acceleration) and a large or growing current-account deficit co-existing with a public-sector surplus. In **Denmark**, the external deficit has been significantly reduced and domestic inflation is falling, but the foreign debt is still large and unemployment is high and rising. In **Belgium**, **the Netherlands** and **Ireland**, inflation is low (or under control) and the current account is in surplus; but the authorities are concerned to reduce the budget deficit, while unemployment is high. European 'hard-currency' countries outside the EMS (**Austria** and **Switzerland**) face the same concerns as Germany about importing inflation if the dollar strengthens, while Switzerland also has to head off some domestic inflationary pressure. **Turkey**, **Iceland**, **Greece** and **Portugal** must come to grips with double-digit inflation. Unemployment is a concern in **Spain**, where it is particularly high, and in **Norway** and **New Zealand**, where it has risen sharply; all three must persevere with medium-term policies aimed at improving employment prospects through structural reform.

International Co-operation

National action can be promoted and made more effective through international co-operation. One immediate priority here is to ensure the success of the Uruguay Round; the outcome will influence the tone of international co-operation for some years to come. An unambiguous confirmation and strengthening of the open multilateral trading system, and a reversal of the continuing drift toward trade intervention, would provide a solid basis for better economic performance in the 1990s—in part by setting a climate in which regional integration develops along lines conducive to global multilateral liberalisation. Failure of the Uruguay Round would bring a danger of retreat from the open trading system into unilateralism, bilateralism and regional 'fortresses'.

Macro-economic policy co-ordination is no less important. In the second half of the 1980s, the success of international co-operation with regard to exchange and financial market developments has bolstered private-sector confidence, thereby contributing to the recent buoyancy of activity and, in particular, of investment. The prospects for stable evolution of exchange rates would be strengthened by a continuation of the close co-operation of monetary authorities to reduce inflation across countries, complemented by co-ordinated exchange-market intervention. Monetary action alone, however, is unlikely to be sufficient to achieve durable financial stability and the improvement in confidence necessary for good economic performance over the coming decade. Co-operation among OECD countries has to be extended and strengthened beyond the monetary sphere. Prompt implementation of necessary budgetary corrections would be a step in this direction. Multilateral surveillance of structural reform can provide additional impetus for mutually beneficial action across a wide range of policies.

The importance of international economic co-operation extends beyond the OECD area. OECD member countries should continue to improve their ties with other countries and to encourage full participation in the open multilateral international trade and financial systems. The Uruguay Round forms part of this process, as also do the current initiatives to deal with debt problems of both middle- and low-income debtors. The economic prospects of developing countries depend, of course, on the policies of these countries themselves. Nonetheless, policies adopted by OECD countries to ensure sustained, non-inflationary growth—and to provide unimpeded access to their markets—can make an essential contribution to the development prospects of non-OECD countries.

14 June 1989