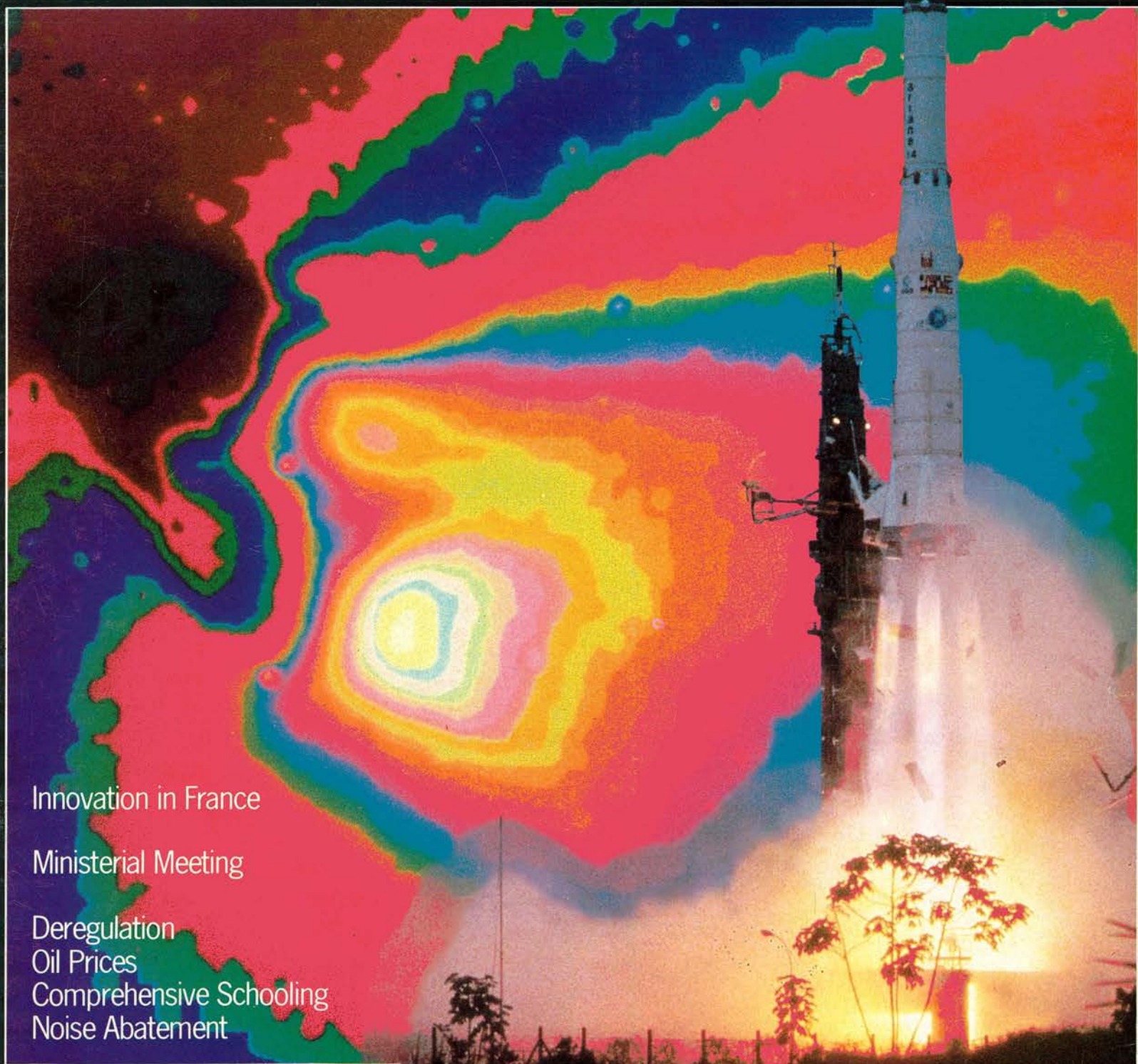


the **OFCIO** OBSERVER



Innovation in France

Ministerial Meeting

Deregulation
Oil Prices
Comprehensive Schooling
Noise Abatement

No. 140 – MAY 1986

the OECD OBSERVER

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Cover:

The passage of Halley's comet provided the occasion for successful co-operation between France and other European countries. France was prime contractor for the launch vehicle Ariane (foreground, to right). Germany (the Max Planck Institute) developed the camera that took the photo of the comet's nucleus (colour-coded in background), while the United Kingdom was prime contractor for Giotto, the space probe launched by Ariane and from which the picture was taken (see Innovation in France, page 9).

PHOTOS Cover: European Space Agency; Ariane Espace; p. 4-8: Léo Jouan, OECD; p. 9: Donoso, Sygma; p. 10: Mail-lac, REA; p. 11: G. Dassonville, IFREMER; Philippe Plailly; p. 12: CNRS; Laboratoires de Marcoussis; p. 15: Silvia Thompson Lépot; British Telecom; p. 16: Photothèque Esso; p. 24: Alexandre Galievsky, OECD; p. 26: A. Nogues, Sygma; p. 29: W. Braga; p. 34: Schiller Fotografi a/s, Ted Bates; p. 35: Philips.

OECD

Ministers Meet



Chairman of Ministerial Meeting, Turgut Özal, Prime Minister of Turkey (right), with OECD Secretary-General, Jean-Claude Paye.

COMMUNIQUE

The Council of the OECD met on 17th and 18th April at Ministerial level. The meeting was chaired by Mr Turgut Özal, Prime Minister of Turkey. The Vice Chairmen were Mr Franz Vranitzky, Minister of Finance of Austria, Mr Ferdinand Lacina, Minister of Public Economy and Transport of Austria, Mr Pedro Pires de Miranda, Minister of Foreign Affairs of Portugal and Mr Miguel Cadilhe, Minister of Finance of Portugal.

Ministers heard a joint statement by the Chairmen of the Business and Industry Advisory Committee to the OECD (BIAC) and the Trade Union Advisory Committee to the OECD (TUAC) exposing their common concern over the level of unemployment, the need for growth and the need to restore the manufacturing base in the OECD area.

The following records the conclusions and agreements reached by Ministers.

The overall economic situation in OECD countries is improving; and despite continuing concerns and difficulties, there are good grounds for confidence about the future. Inflation has been reduced substantially and approximate price stability achieved in some countries. Economic growth in the OECD area seems set to pick up to a rate of 3 per cent or better this year and next, and to be evenly spread among most countries. Employment growth is likely to increase. Exchange rates have moved significantly over the past year away from levels that had produced unbalanced competitive positions among countries, and had contributed to international current-account imbalances. Interest rates have come down substantially in nominal terms, although less so in real terms since inflation has also declined. However unemployment and especially youth unemployment remains at very high levels in most OECD countries.

Ministers were concerned that in many countries there has not been significant change in this situation up to now.

Lower oil prices are contributing to the favourable macro-economic situation, by significantly reducing inflation, raising real incomes in oil importing countries, and providing an additional stimulus generally to economic activity worldwide, although there will also be negative impacts for some energy exporting countries. More fundamentally, OECD countries are beginning to reap the benefits from concerted efforts to improve the functioning of their economies, to reduce domestic imbalances, and to strengthen international co-operation.

OECD Governments intend to take advantage of these favourable conditions to promote a stronger growth trend over the medium term without rekindling inflation. Success in this effort will help in the priority task of substantially reducing present very high levels of unemployment. It will contribute to stronger growth in developing countries and to reducing international debt burdens. It will facilitate efforts to bring about necessary structural adjustment, particularly in sectors plagued by global excess capacity. It will also provide a favourable environment for strengthening the open multilateral trade system - whose effective functioning is of fundamental importance to the world economy.

A stronger growth trend can be achieved through co-operative action among our countries. Four broad imperatives can be identified in this regard:

- Macro-economic policies within and among OECD countries need to be supportive of growth and employment over the medium term by keeping inflation low and by eliminating domestic imbalances. They also need to be directed toward reducing international imbalances; and to be implemented in ways that promote greater stability of exchange rates at levels better reflecting economic fundamentals.
- Structural policies need to be directed towards enhancing dynamism by enlarging the opportunities for productive activity, increasing flexibility and improving incentives. Structural policies also need to be perceived in their relation to trade policies: where serious distortions exist in national markets, domestic resources are channelled into less productive uses, the flexibility of economies is reduced and, inevitably, the distortions spill over into international markets. Increased attention should be paid to trade distorting effects of government subsidies to specific sectors.
- The capacity of developing countries to adjust their economies and increase growth through efficiency-oriented policies needs to be supported by OECD policies and improved co-operation in financial, trade, investment, technology and other areas.
- There is a need to reinforce the open multilateral trading system, to strengthen the provisions and the disciplines, and to further trade liberalization on the broadest possible basis. A comprehensive new round of negotiations needs to be launched in the GATT to preserve, strengthen and extend the multilateral trading system.

Specific lines of action are the following:

MACRO-ECONOMIC POLICIES

It is essential to bring about a better balance in current account positions among countries in order to reduce the risk that such imbalances, which remain large, might eventually undermine continued economic expansion. The longer such imbalances persist, the more difficult their ultimate correction. Smooth adjustment requires that in countries with large current account deficits output grows more rapidly than domestic demand; and conversely for countries with large surpluses where domestic demand should be sufficient to ensure that

growth is at least in line with the increase of productive potential and thereby contributing more to world economic growth. The policy priorities agreed last year remain relevant. Policy priorities include, inter alia, reduction of the budget deficit in the United States, increased domestic demand and the encouragement of increased imports into Japan, and the strengthening of growth in European and other Member countries through both structural and macro-economic policies. Action in line with these priorities is under way and will be strengthened. In this context, Ministers underlined the need for strengthened co-operation aimed at ensuring greater consistency and complementarity of economic policies in the medium term. Necessary procedures and techniques for achieving this objective should be actively studied.

Exchange rates have an important role to play in complementing fundamental policy actions for the reduction of current account imbalances. Concerted action has helped to bring about exchange rate changes in a direction more consistent with economic fundamentals. These changes should not be hampered from fully playing their role in the international adjustment process. Co-operation to this end will continue, recognising that appropriate exchange rates need to be sustained through internationally compatible policies. Efforts to improve the functioning of the international monetary system should be intensified.

The control of public expenditures and budget deficits is essential to establish a stable domestic financial environment and to promote a durable reduction in real interest rates which will help private investment to expand and thus promote sustained growth worldwide. In countries where deficits are large and public debt is rising strongly - and this is still the case in most OECD countries - further deficit reduction cannot be postponed. Deficit reductions should be pursued in ways consistent with the objective of improving growth. Such reductions are best achieved through stronger control over public expenditure, rather than by raising taxation which would damage incentives. Where the trend of rising public debt in relation to GNP is being reversed, and budget deficits have been reduced sufficiently to restore fiscal flexibility, further deficit reductions may be less urgent. In this case, continued progress in containing public expenditure creates room for tax cuts. Generally, medium-term budget objectives should be framed having regard to the need to avoid rising ratios of public debt to GNP and to bring these down where they are unusually high; to take fully into account the implications of demographic trends for the viability of social security systems; and to contribute to a sustainable balance between domestic savings and investment. Moreover, tax reform can be undertaken to promote stronger growth and adjustment.

The macro-economic gains to be derived from lower oil prices can probably best be achieved by allowing them to be transmitted through lower prices to households and enterprises. In a number of countries governments have considered it appropriate to absorb a share of these gains through higher taxes in order, for instance, to reduce budget deficits or to increase efficient public investment, to lower other taxes that are judged excessive or to replace reduced oil or gas revenues.

In recent years, the primary task of monetary policy has been to bring down inflation and keep it under control. Many OECD countries have made substantial progress. The risk of a re-acceleration of inflation will always persist. Thus, monetary authorities will need to remain on guard. In this context current monetary objectives and intentions are supportive of sustainable growth, and provide room for further declines in interest rates - particularly in view of the disinflationary impact of lower oil prices. Co-operation among monetary authorities on the timing of interest rate reductions can help minimize unwanted exchange-market reactions.

STRUCTURAL POLICIES

Sustained good economic performance results from a continuing process of structural change towards national economies that are flexible and dynamic, and which are bound together through an open and multilateral trade system for goods and services, the rapid diffusion of technology and know-how, and efficient and internationally integrated financial markets. Continued environmental protection and improvement can and must be an integral part of this process. Achieving this desired evolution of the world economy will take time and will require determination to overcome the obstacles to effective structural adjustment, one being the fact that in some specific industrial sectors, public subsidies are presently hampering the possibilities of industries to pursue sound adjustment policies.

Discussion of structural policies focussed on the following aspects:

Employment

Unemployment is a waste of our most precious resource, human potential, and solving this problem is an essential priority. Labour markets which respond promptly and efficiently to the new job opportunities created by growth, trade, technological and structural change are essential for the promotion of more dynamic economies and for a higher rate of job creation. The creative involvement of both labour and management is central to achieving this. Wage moderation has played an important part in bringing down inflation. Continuing moderation will help to sustain non-inflationary growth and an improvement in real standards of living. Wage settlements must take into account market conditions, productivity trends, and the decline in inflation that is taking place. Active policies to promote the better functioning of labour markets will include, inter alia, actions to improve access to employment, particularly for youth and the long-term unemployed; to facilitate labour mobility; to modify provisions that inhibit the hiring of new workers; to strengthen programmes for skill development, and in particular to improve the responsiveness of education and training to the needs of the economy.

Financial Markets

The rapid structural changes that are taking place in financial markets improve the overall capacity of these markets to provide funds more efficiently and to meet better specific needs and preferences, thus contributing to stronger growth. While this process is to be welcomed, it also has particular implications for policy. The more powerful transmission of financial impulses internationally requires closer co-operation in the conduct of financial policies. Likewise national systems of supervisory and prudential control need to adapt to the structural changes in domestic financial markets, and to their increasing internationalisation. This requires, inter alia, increased international compatibility of national policies.

Allocation of Public Resources

In addition to appropriate control of budget deficits and the overall scale of government spending, budget policy must also be directed to improving the efficacy and efficiency of government programmes. This implies flexible reallocation of resources to priority needs. It also implies improving the structure of taxation by reducing tax rates and broadening tax bases, and by narrowing differentials in effective tax rates across different economic activities.

Technology

Over the last decade OECD economies have undergone profound changes in structure and operation with considerable shifting between activities. Technological developments, such as information processing, have permitted the growth of entirely new industries as well as altering products and processes in



Vice Chairmen of the Meeting were Austria and Portugal. To left: Portugal's Min Franz Vranitsky.

many established industries. For the diffusion of new technologies to provide the fullest possible contribution to growth and employment, effective transfer of technology needs to be facilitated and a suitable environment for risk taking is necessary, as are responsive systems of education and training. Appropriate protection of intellectual property contributes significantly to the successful creation and diffusion of technology and concerted efforts are needed to strengthen this protection worldwide.

Agriculture

Policies of domestic support for and protection of agriculture have sometimes inhibited needed adjustment and led to increases in global supplies in excess of demand. This problem will become even more acute if technological innovation in agriculture is not matched by effective adjustment. Studies in the Organisation should contribute to a better understanding of the issues involved. Ministers asked the Organisation to intensify the work on these issues taking also into consideration the macro-economic and social implications of agricultural policies. Ministers agree that in many cases present policies entail not only heavily increasing costs but also the danger of aggravating conflicts in agricultural trade which, in turn, risk exacerbating trade tensions more generally. Particular concern was expressed over the recent escalation of tensions in trade in grains and in a number of other agricultural commodity markets. In the light of the serious situation, it is urgent that OECD countries, while taking into account the wellbeing of farmers, make strenuous efforts to reorient policies which have an effect on agriculture in order to encourage structural adjustment, to bring down budget expenditures, to correct market imbalances and to reduce tensions internationally.

Energy

While a prolonged period of relatively low oil prices might intensify long-standing concerns about long-term energy supply security and the possibility of tighter energy markets in the future, there is no need at present for new international action by Member countries in the area of energy policy, although some Member countries may decide that internal adjustments are required for regional sectoral or other national reasons. The



Minister of Finance, Miguel Cadiz. To right: Austria's Minister of Foreign Affairs,

energy policy objectives set out in the Conclusions endorsed at the meeting of OECD Ministers on 9th and 10th May 1983 (and recently reconfirmed by the Governing Board of the International Energy Agency) were therefore reconfirmed and their implementation will continue with whatever adjustments may later be decided are necessary. For this purpose, an updated assessment of the medium- and long-term energy outlook will be developed to serve as a basis for seeing whether energy policy objectives are likely to be achieved under current and future market conditions.

RELATIONS WITH DEVELOPING COUNTRIES

Interdependence is a reality. Strong economic performance in the OECD countries is crucial for growth in the developing countries. Conversely, economic performance in developing countries will increasingly affect growth in the OECD area. More dynamic and broadly shared economic development entails action across a wide range of policies in both developing and developed countries.

Debt burdens remain onerous for a number of countries and severely hamper their process of development. Growth-oriented structural adjustment and expanding trade are essential for resolving this problem and overcoming other obstacles. OECD countries welcome and encourage the efforts already made by many developing countries in difficult political and social circumstances. They also welcome the progress that is being made in implementing the debt initiative proposed by the United States in Seoul. They urge the continuation of co-operative efforts by debtor nations, the commercial banks, and the International Financial Institutions to realize the objectives of this growth-oriented debt strategy on a case-by-case basis. Debtor countries, working in co-operation with the IMF and the World Bank, need to develop and put into place comprehensive policies to permit sustained growth and sustainable external balance. This will contribute importantly to improved financing by mobilizing domestic savings, by stemming capital flight and by attracting bank credits and foreign direct investment – which should play a more prominent role in future capital flows.

For their part, OECD countries need to promote an international economic environment which will support developing

countries' policies. OECD countries must therefore strive to improve the dynamics of their own growth and adjustment; to ensure freer access to their markets; to co-operate regarding the resumption of export credit cover on a case by case basis to countries implementing effective adjustment policies; to support the creation of the Multilateral Investment Guarantee Agency (MIGA) to encourage new investment in developing countries; and to provide adequate concessional and non-concessional financial flows, in terms of quality and quantity.

Oil price developments are benefiting energy importing developing countries. However, the financial situation of a number of heavily indebted oil exporting developing countries has deteriorated and should be addressed through appropriate measures within the overall debt strategy. The downward trend of non-oil commodity prices has increased the need for more open and stable markets, for action to remove measures distorting trade in these commodities and for diversification of production and processing in commodity-dependent economies. For this, enhanced attention by the international community is required.

The plight of the poorest countries, and especially those in Sub-Saharan Africa, continues to give rise to serious concern. For these countries also it is essential to undertake growth-oriented policy reform and structural adjustment measures. Special efforts are, however, required to support such endeavours through improved and better co-ordinated aid programmes. OECD members agreed to exert their best efforts in providing additional official development assistance, through both bilateral and multilateral channels, to support growth and significant adjustment programmes in the poorest countries. Multilateral assistance has a key role in this respect. Hence the World Bank's Special Facility for Africa and the recent establishment of an IMF Structural Adjustment Facility are welcome. Hence, too, the importance of a substantial replenishment of IDA. Bilateral donors, for their part, must improve current aid policies and practices in order to provide flexible, timely and better co-ordinated financial support for development-oriented programmes.

Ministers look forward to the forthcoming Special Session of the United Nations General Assembly on the critical economic situation in Africa. This session provides an opportunity to improve co-operation between African Governments and the international community on the basis of a thorough review of past efforts in solving that continent's problems. It further provides an opportunity to set out orientations for future action aiming at the rehabilitation of the medium- and long-term development of Africa.

TRADE POLICY

Ministers vigorously endorsed the need to launch a comprehensive new round of multilateral trade negotiations. Ministers noted with satisfaction the preparation in GATT for a Ministerial meeting in September for this purpose. Member countries' Governments are determined to do their utmost to support the new round and the process leading to its launching. All countries, developed and developing, have a stake in the early launching and successful completion of a new round. The general purpose of the negotiations should be to improve the provisions and disciplines of the GATT, expand its coverage, extend its application to new areas, promote a substantial further liberalization of trade and consider trade aspects of other international economic policies. In this context it was recognised that parallel efforts in other areas of international economic co-operation would be conducive to achieving the objective of trade liberalization. Ministers support a comprehensive agenda for the negotiations, including issues to keep the GATT relevant to changing world trade conditions, which



To left: U.S. Secretary of the Treasury, James A. Baker III. To right: Shintaro Abe, Japanese Minister for Foreign Affairs.

would provide the possibility of achieving balanced results. The new round should, inter alia, address the issues of trade in services and trade related aspects of intellectual property rights and foreign direct investment. The negotiations should lead to a fuller participation in the open multilateral trading system of developing countries which should contribute to the liberalization process in a manner commensurate with their stage of economic development.

Effective commitments on standstill and rollback are necessary to create a positive negotiating climate and to further the achievement of the overall objectives of the trade negotiations. Ministers, therefore, expressed their preparedness to contribute to an effective and credible standstill undertaking by all GATT Contracting Parties and to discuss with their partners a meaningful monitoring process for the application of that undertaking. They also underlined the importance of the rollback of protective trade measures in order to contribute to the achievement of the liberalization objective of the new round.

Progress on actions to relax and dismantle existing trade restrictions was reviewed. Against a difficult economic background, protectionist pressures have persisted and trade restrictions have continued to be introduced, although at a markedly slower rate than previously. At the same time, efforts to liberalize trade have resulted in the abolition of certain restrictions and in the relaxation of others. The results, though modest, represent a useful effort in themselves and contribute to confidence for new multilateral trade negotiations. In the face of the continuing threat of protectionist pressures Ministers reaffirm their commitment to avoid new restrictive measures and to pursue their efforts to reduce trade restrictive and trade distorting measures. More specifically, Ministers undertook to seek as much liberalization as possible within the renegotiation of the Multi Fibre Arrangement, a number of them with the final objective of applying GATT rules to trade in textiles.

In order to assist developing countries, Ministers expressed hope that the Contracting Parties in the new round would explore means of giving appropriate recognition in the GATT context to trade liberalization measures adopted by developing countries under structural adjustment and sectoral programmes.

Services

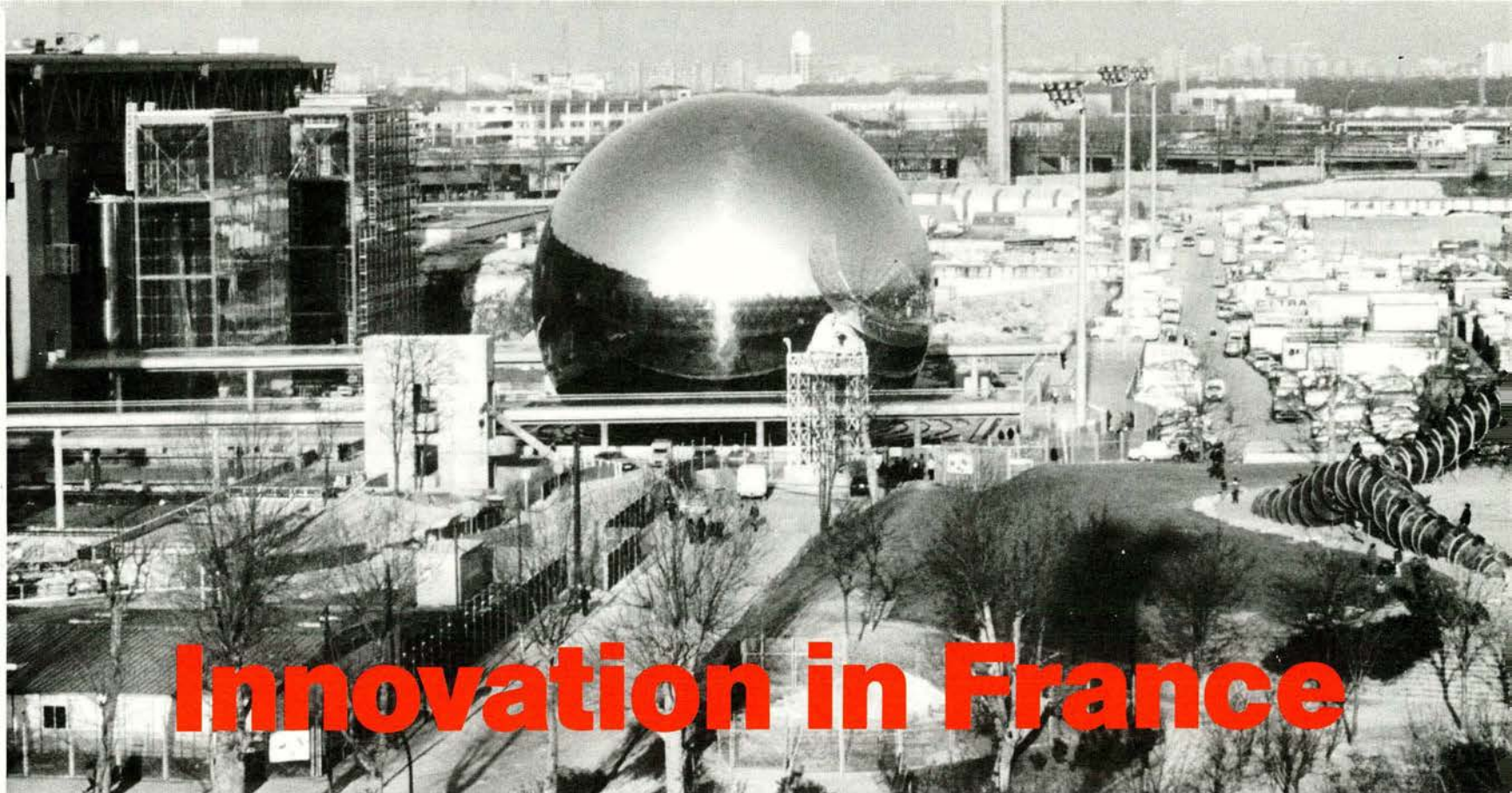
Ministers also reviewed the Organisation's wide ranging activities on trade in services. Inclusion of services in a new round of multilateral trade negotiations would contribute importantly to trade liberalization. Related work in OECD should be pursued actively. In this regard Ministers stressed the need to intensify and broaden ongoing conceptual, analytical and statistical work on the complex issues involved, particularly on the application of general concepts to individual service sectors. Similarly, they underlined the importance of extending and making more effective the Code of Liberalisation of Current Invisible Operations and other existing instruments which are applicable to trade in services among OECD Members, in order to promote liberalization in as many sectors as possible. Ministers requested the Secretary-General to report on progress at next year's Council at Ministerial level.

INVESTMENT

Ministers observed that Member countries encourage the further liberalization of restrictions on direct investment in both developed and developing countries. The Ministers observed that further liberalization of investment policies within the OECD would contribute to the success of broader multilateral efforts in this important area. In this regard, the Ministers welcomed improved efforts being made to strengthen the OECD Code of Liberalisation of Capital Movements and national treatment instrument.

CONCLUSION

In order to remove international frictions and imbalances through the efficient distribution of resources, it is important to advance worldwide structural adjustment from a medium – and long-term perspective, as well as to promote the further opening up of markets within the free trading system. International co-operation, including industrial co-operation through direct investment, technology exchange, and joint research and development, is very important because it promotes structural adjustment on a global scale and facilitates the formation of a harmonious division of labour, thereby contributing to the deterrence of protectionism.



Innovation in France

The new science and industry museum at La Villette in Paris.

So that OECD countries – and others – can evaluate how well their scientific, technological, industrial, economic, educational and social institutions are contributing to innovation, OECD is carrying out a series of reviews of countries' innovation policies. The first is of France¹, one of the world's leaders in science and technology, where R&D has been strongly supported by the government, whatever its political coloration.

A country's capacity for innovation is notoriously difficult to evaluate. In France, moreover, a new government, which has just taken office, is changing its institutional arrangements and perhaps its approach to the problems². However, both the strengths and the weaknesses of the French system have proven remarkably persistent, and many of the problems remain, despite the efforts of a series of governments.

The Evidence

First the strengths. In addition to such well-known examples as the high-speed train (TGV), a list of some of France's technological success stories includes:

- The SM 97 (*Le Nautilus*) – a manned diving machine, completed in 1985, which can go down to 6,000 meters and thus explore 97 per cent of all the ocean's depths
- A new electrolytic furnace for producing aluminium – to be built by Pechiney in the French Alps – which saves substantial energy and improves process monitoring
- Horizontal drilling in oil prospection which makes it possible to work previously

inaccessible sites – first used off the coast of Italy

- A machining centre for gear boxes at Renault Machine Tool, which has a new handling technique – robot trucks, flexibly guided by a software system
- A "smart" credit card (memory card) equipped with a microprocessor which, among other things, is intended to prevent illegal use
- Entry into space technology with the expendable launch vehicle, "Coralie", without which "Ariane" would not have been possible
- An advanced nuclear programme which has enabled France to produce 65 per cent of its electricity through use of atomic energy
- CIT-Alcatel's early technical lead in digital switching.

As scientific "firsts", one might mention:

- A group working at the Luminy Immunology Centre was the first to successfully clone a gene of the major immune system in man.
- A French research scientist identified the first cancer gene and demonstrated that it is normally present in every cell.
- France (scientists at the Pasteur Institute) is a world leader in identifying the

AIDs virus and developing a diagnostic technique for its detection.

Yet OECD's report characterizes French technological capability as a "brilliant facade" and cites a 1984 survey of European executives by a management consultant (Booz, Allen and Hamilton) to the effect that the striking French achievements may conceal a decline in industrial creativity, particularly in consumer electronics. OECD's analysts also note a decrease in the number of domestic patent applications and in foreign applications designating France as the inventor, as well as a European Management survey of innovating capacity, based on 33 criteria (and the judgment of a panel), which shows that France dropped from 9th to 13th place

1. The review, to be published shortly by the OECD, has three parts: a report written by members of the OECD's Science, Technology and Industry Directorate, another by a group of examiners, and a resumé of discussions within OECD's Science and Technology Committee with French science authorities as well as the examiners. Its title will be *Reviews of National Innovation Policy: France*.

2. For example, the Ministry of Research and Technology has been eliminated and replaced by a "Delegate" Minister for Research and Higher Education who is responsible to the Ministry of Education.

between 1980, the year of its first survey, and 1985.

Can the weaknesses be attributed to the slowdown which began in 1969 in the share of France's national resources devoted to R&D, and especially in public funding, compared with its closest competition. (This was largely reversed during the years 1979-85). What about the relatively small number of scientists and engineers (3.7 per 1,000 in the labour force as against 4.7 in Germany and 6.7 in the United States)? The report's answer: R&D is a necessary but not sufficient condition for innovation and technological competitiveness.

Recent studies have found that French firms are neither on the watch for innovation opportunities nor able to create a climate conducive to the development of research and innovation among their employees. They also point to the inadequacy of relationships between industry and research and lack of motivation to patent. OECD's report examines these factors and a wide range of others in trying to account for France's weakness in innovation, an elusive concept since it goes well beyond conventional R&D or science and technology.

Education and Culture

The obstacles to innovation may be much more fundamental to French society than is immediately apparent. One of the key questions posed by the report is whether France can be said to have what is known as a "technical culture". The conventional answer would seem to be that it does. Mathematics and the sciences are given great weight in school and university (unlike the English speaking countries, there are minimum compulsory courses in maths in many non-scientific secondary-education streams), and there is a great tradition of *grandes écoles* – outside the university – which include advanced and prestigious technical establishments, such as the Polytechnic, Mines, and Civil Engineering (Ponts et Chaussées).

Technical training in upper secondary schools (16-18 year olds) has often been treated as a "residual", since students generally enter such training only if they fail in general studies. Certainly they are not chosen on the basis of criteria related to technology as such. This negative selection process may be a reflexion of the way in which French society regards practice as against theory, OECD's report notes. Moreover, teaching of mathematics and science in primary and secondary school is often abstract, formalistic and theoretical. Nor is there any strong tradition of apprenticeship, such as is to be found in German speaking countries, for example.



The University of Technology at Compiègne has been an exception in the French system. Set up in 1973, it has selective admission on the basis of students' records rather than nationwide exams or preparatory classes. It is small (2000 students including 650 post graduates) and awards an engineering diploma that is not a national diploma. Its curriculum is based on an analysis of the needs of industry; and research – much of it funded by industry – focuses on a limited number of fields.

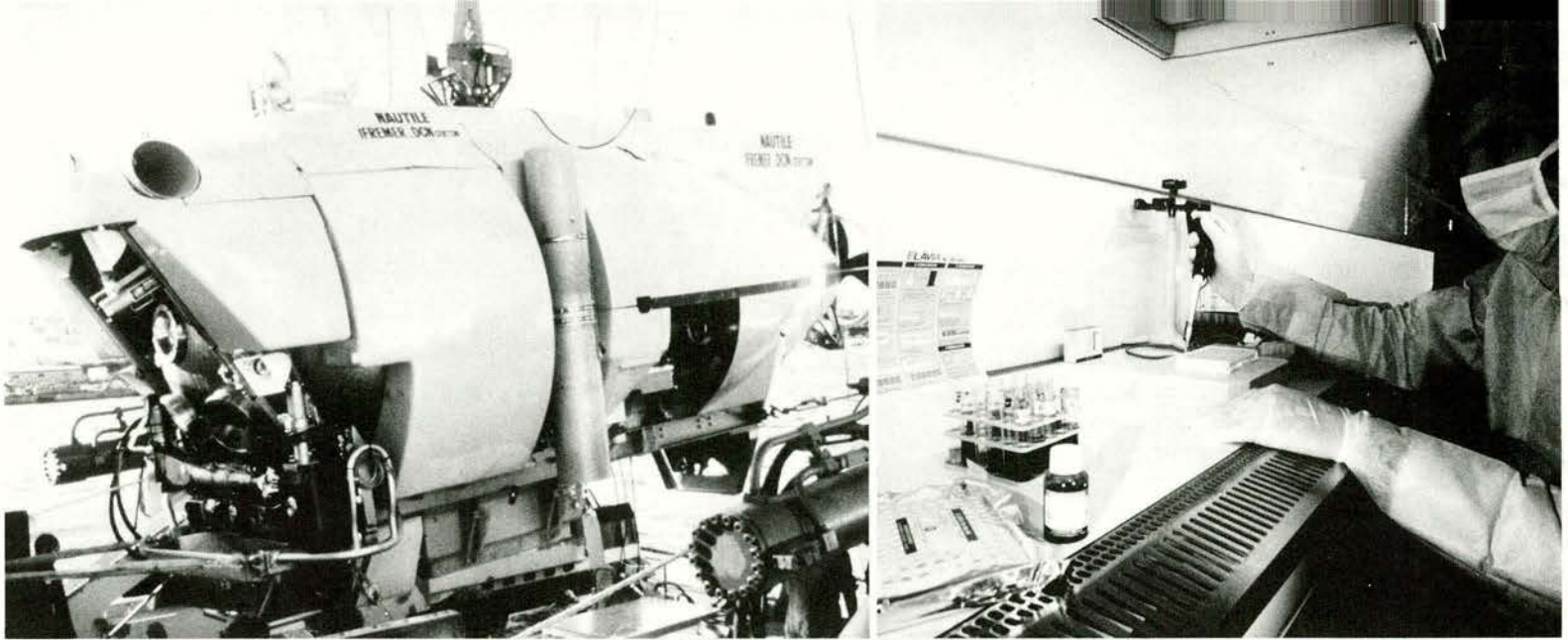
At the level of higher education, it is well known that the *grandes écoles* "skim off the cream" of young people gifted in maths and sciences, as other institutions cannot. What is less generally known is that, in the *grandes écoles* themselves, despite the existence of good laboratories and professors, the students are not, for the most part, well prepared for research as such. Moreover, as the former Minister of Research and Technology, Hubert Curien, acknowledged in discussions within OECD's Science and Technology Committee, graduates of the most prestigious *grandes écoles* aim at "rising as quickly as possible through the ranks of the various administrative bureaucracies, public or private, rather than putting the scientific or technological training they have received to good use." And they succeed, though for these jobs their education is not necessarily the one that will best prepare them to solve the problems facing decision makers in today's society. Hierarchically minded, trained in special preparatory classes, chosen by a draconian selection process and largely from the upper economic and social classes, these graduates are not encouraged to participate in the intellectual ferment and mixing of disciplines that is necessary for innovation but rather tend to have a protectively conformist mentality.

Over the last 20 years, new schools have been set up, attempts made to bring technology into the universities, with masters' degrees in science and technology, and to train higher level technicians through new University Institutes of Technology (IUT).

New financial arrangements have been made so that universities become more practically oriented: they are allowed to acquire shares in companies, set up firms or subsidiaries and exploit patents. Universities, whose degrees are granted on a nationwide basis, have been allowed to set up their own courses and change them when they consider it is necessary, but the list of courses must still be submitted to the Ministry of Education, and the degrees are under national control. Beginning in January 1985, sabbaticals (paid leave, a novelty under French law) of six months to one year were initiated for university staff (provision was made for 400 such years in 1985).

Despite these reforms, some problems noted 15 years ago have still not really been solved. From top to bottom of the educational system, the problem of experimental training by research for research has still not been satisfactorily resolved.

Experts are querying how much real autonomy the universities have been given



To left: "Le Nautilus", a manned diving machine that goes to great depths. To right: A lab technician testing for AIDs.

by a January 1984 law: though free to choose their courses, they are not free to select their staff, given the rigidity of the rules governing the civil service to which professors in higher education — like all other French teachers — belong. Recruitment "outside the service conditions" is strongly opposed within the universities; the latter have proven incapable of reserving more than a small number of posts for French applicants from industry or for foreign professors and researchers.

Nor has negative selection been limited: students trying to get into university are still generally those who are unable to prepare for the *grandes écoles* or be accepted for special university courses (medicine, university institutes of technology, etc.) where selection criteria are used.

Another problem, especially at a time when technology goes beyond national frontiers, is what the report calls "the sacrosanct myth" of nationwide degrees. "Everyone accepts that they are a myth since everyone knows — and the best informed act accordingly — that degrees vary greatly in value from one university to another". There is an internal contradiction in a policy which claims to favour diversity of types and levels of qualification — and their adaptation to changing demand — while retaining approval at national level which substitutes for the judgment of "customers on the market for qualifications."

"French universities in general seem very hard up to the foreign observer, as is clear from the bad state of repair of buildings and the notorious shortage of libraries", says the report. Despite the granting of additional funds since 1983, external bodies, as important for certain research workers as the National Library or the Museum of Natural History, both in Paris, operate less and less satisfactorily due to lack of staff, maintenance and modernization of collections.

In the universities, a vicious circle is at work: to get a dynamic, industry-oriented policy under way, the universities would have to have certain minimum finance, but many firms consider that it is precisely the universities' lack of funds that constitutes an obstacle to closer collaboration.

One suggestion is to increase enrolment fees which are called "ridiculously low" compared to those of other developed countries. Such a move would eliminate the "phantom students" who enrol simply for the perks available with student cards. The June 1985 increase in these fees from F 250 to F 330 seems markedly insufficient.

Recent reforms intended to have the system "walk on two legs" in the training of scientists and engineers, by bringing together the *grandes écoles* and the universities, do not affect the former, of which about half — including the most prestigious — are outside the Ministry of Education.

"The idea that research is only possible once knowledge has finally been accumulated must be resisted", the report notes. "Undergraduate research has been attempted in some places, and engineers having followed such courses appear to be two to three times more creative than the others."

Industry and Innovation

Three examples are given to illustrate why French innovation and competitiveness have been so successful in some areas and not in others.

Aerospace

France has always been in a dominant position in the aircraft industry, which it entered before World War I — thus having what OECD's report terms "a long established presence". After some "resounding failures" in the Sixties, France's aerospace

industry is now in second place in the western world, after the United States, and more or less on a par with the United Kingdom — with half the personnel. Aerospace accounts for 5 per cent of national exports, but the import content is also high (Airbus engines). Nevertheless, there is an uptrend in the export surplus. Achievements include winning the place of prime contractor for the expendable launch vehicle "Ariane", participating in consortia for scientific satellites and spacelab as subcontractor, and building direct broadcasting and remote-sensing satellites on their own.

The continuity and volume of government support for aerospace have been "decisive" for the industry's success, OECD's report says. The substantial amount of financial assistance is the result of a history of national independence in the field of military orders and in a wide range of subsectors within the industry. At the start of the Sixties, budgetary priority embodied in a Space Plan led to the setting up of the government-funded and operated National Centre for Space Studies (CNES). (The subsidy to CNES has been increased by 47 per cent in real terms between 1981 and 1984.)

The present joint effort with the European Space Agency is an important element in France's success in aerospace because it has spread risks, diversified activities and promoted French equipment in European markets; moreover the balance between national programmes (60 per cent of the CNES budget) and European Space Agency activities has been a good one.

In the aircraft sector, the French engine firm, SNECMA, has co-operated with the U.S. firm General Electric in medium and high-thrust engines, enabling France to gain a share of the world markets and to sell to the United States.

Another decisive factor has been the focus on exports (Airbus and its derivatives and helicopters). While in the United

States, domestic procurement contracts have been increasing dramatically in the aerospace industry, accounting for 70 per cent of orders in 1983, France has relied on exports (70 per cent of military equipment and 85 per cent of civil aircraft are exported), a strategy which also entails risks because of the heavy geographical concentration of military sales.

Though aerospace has special characteristics, particularly its dependence on procurement, and export agreements between governments, it highlights the usefulness of perseverance by the authorities, synergy between the domestic market and exports, efficient co-operation and a strong, systematic emphasis on marketing.

But competition in future will be tough. France has fewer scale economies and less flexible production facilities and labour force than the United States. Firms are handicapped by lack of personnel, especially for CAD/CAM, digitization and commercial logistics. Finally, there are still technological lags, (e.g. in engines and space shuttles). Technology transfer from the military to the civil sector could be strengthened.

Electronics

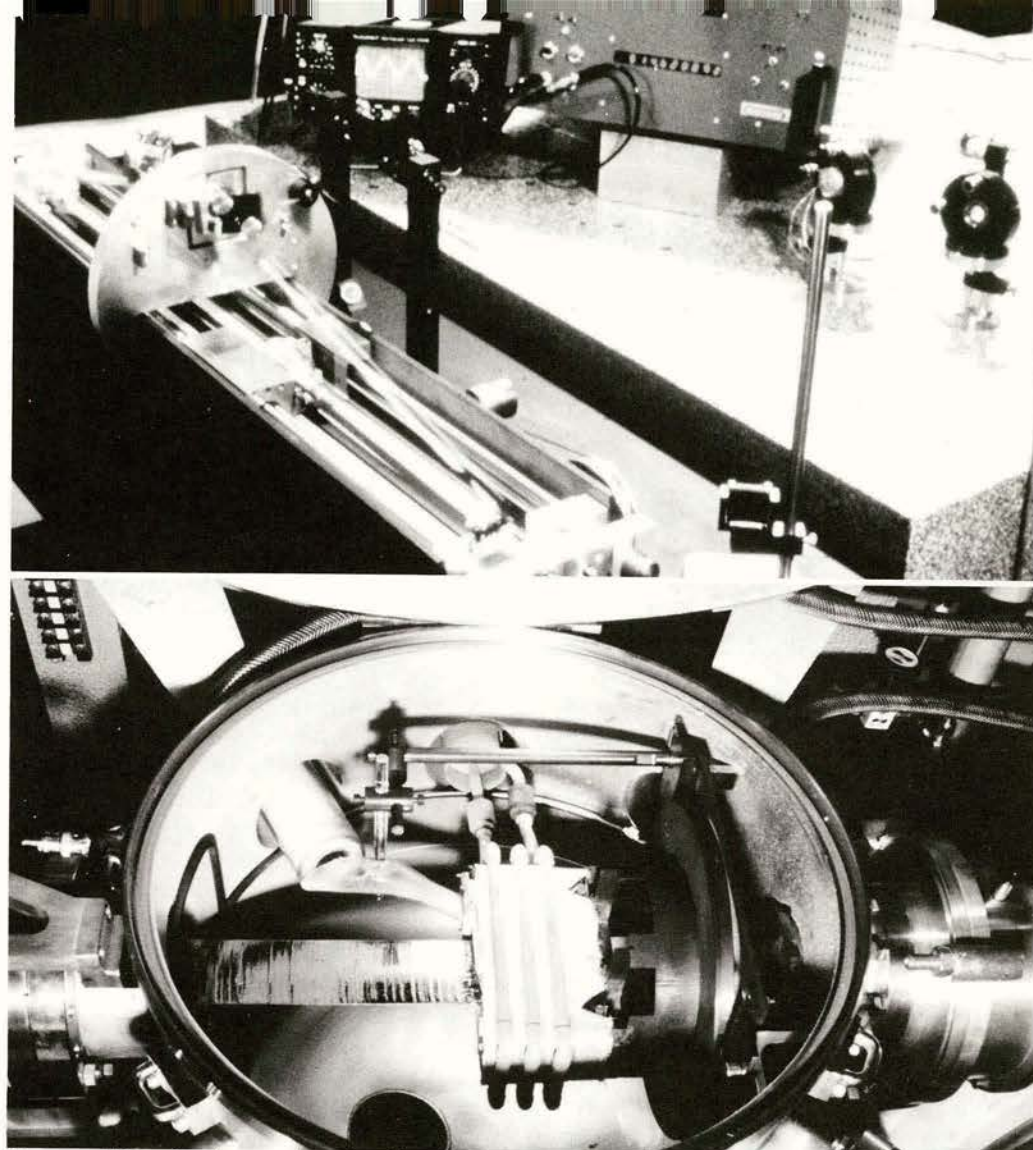
Unlike aerospace, the competitiveness of electronics varies greatly from sector to sector. In telecommunications, industrial and military electronics, and software, France has earned an international reputation. At the same time, local supply of consumer electronics, electronic office equipment and automatic systems is relatively limited, and France is particularly weak in many of the up-market segments (the microcomputer business, robotics, computer-aided design, software packages, video recorders) which will be expanding the most rapidly.

The government has been investing substantial sums in this industry over a long period. There have been three computer plans, the latest one costing more than FF5 billion (\$700 million), while component plans have been allocated FF2.5 billion since 1979. The variety of these plans illustrates the constant difficulties confronting the electronics sector.

The most recent strategy has made the electronics sector as a whole a major national priority. As is the practice in France, quantitative objectives were set for the 1983-87 period, and 50,000 new jobs were expected as against a previously predicted net loss of 10,000 and a trade surplus only slightly less than the foreseeable deficit. The major goal was technological independence in integrated circuits and computers.

Despite subsequent modifications, the two main initial actions had the biggest impact:

- In practically each sub-sector the gov-



Above: Measuring the wave lengths of laser emitted light for possible use in France's atomic clocks which set the world time standard. Below: Co-operation with other European countries in electronics is underway with ESPRIT.

ernment set out to create one or two *national champions*, which absorbed the bulk of government funds, incorporating the activities of the other French electronics firms, a move facilitated by nationalization of all the major French industrial groups, including several in the electronics field (CII-Bull, Thomson, CGE, CGCT, Matra).

- Although the government had always contributed substantially to funding most of the firms concerned, *financial support* for this plan was marked by its volume and constancy. Thus FF140 billion (\$20 billion) were to be invested in research and development and productive investment by the French electronics sector over a five-year period. Some 46 per cent was to be provided by the government (including research grants by the Armed Forces and the telecommunications administration) – almost 40 per cent by French firms and only 14 per cent by foreign firms.

This approach, inspired by an "arsenal" strategy which had already been used in the past in this sector, somewhat ineffectively, contrasts with that of the Japanese – who form flexible co-operative projects associating many firms in work on components (VLSI project), computers (5th gener-

ation project) and optoelectronics, and encourage the exchange of research staff among private laboratories. This difference leads OECD's report to comment that the procedure of "forced mergers" is a "debatable" one.

Moreover, the *national champions* approach may have detrimental consequences for small firms which are often the spearhead in the electronics field, as shown by the example of the United States.

Finally, the report comments, greater specialization and a *European division of labour* seem essential and are coming into being with the Esprit, Race and Brite programmes in research and pre-competitive activities and agreements between manufacturers (a joint Bull/Siemens/ICL research centre, the Bull/Siemens project for a super computer and a factory of the future, and the Olivetti/Thomson and Matra/Norsk Data agreements). The announcement of the start of the Eureka programme has already had an important impact.

Chemicals/Pharmaceuticals

In this sector, public orders are hardly significant and the government finances only 4 per cent of R&D. Basic chemicals are

highly capital-intensive and success is mainly based on price competitiveness, but the chemical industry also includes a scientific, extremely innovative element requiring the use of highly skilled labour and heavy investment in R&D (5 per cent of turnover on average for fine chemicals, 8 per cent for pharmaceutical products).

This sector suffers from the "congenital defect" of the French industrial fabric – sluggishness in adapting to change and especially reluctance to disinvest. Government-directed replanning of the sector artificially merged groups which subsequently had to be dismantled. Restructuring was very slow and complicated, causing opposition or even hostility among certain senior executives, and entailing a high price for the government.

Recent restructuring seems to have been largely to the advantage of Rhône-Poulenc, which is now concentrating on specialty chemicals (60 per cent of activity), a position envied by many international groups since the market is vast (\$135 billion worldwide) and highly profitable. By contrast, reorganisation of the basic chemical sector has not been successful. Overcapacity has been reduced less than in most other OECD countries; and the example of German groups, which have maintained their diversified and integrated structures and advanced on all fronts, shows that efficient replanning does not necessarily mean pooling activities of the same kind.

Highlights of the Recommendations

In addition to the two key areas above, OECD's report investigates many other facets of innovation such as the organisation of research systems, public research, financing mechanisms and the regional dimensions. The examiners also discuss these issues before coming to a set of recommendations³.

The examiners find in a general way that there may be an inherent conflict between the French system and the new directions of economic growth. It is increasingly clear that technology contributes to economic growth through a bottom-up process in which small and medium sized enterprise formation, entrepreneurial activities, diffusion of new technologies and a large, skilled manpower base are critical factors. In this sense, the French system, with its traditional emphasis on elite education and its tradition of top-down, state-led "big programmes" may no longer be consistent with stimulating growth and employment. More specifically, the examiners recommend:

1. Mobilizing and Developing the Pool of Educated Manpower.

- Fulfilling the commitment to a broadly educated population. The examiners welcomed France's effort to increase the number of students obtaining the baccalauréat (80 per cent by the year 2000) and recommend the lowering of barriers that separate the highly educated elite in the best colleges from the mass of young people. More generally, they recommend higher status for technical culture and education, and practical applications in education as against the traditionally privileged theoretical knowledge, as well as more emphasis on professional diplomas.

- Favouring independent initiatives and responsibility for research and educational establishments. The limited degree of autonomy and responsibility allowed educational establishments and research centers inhibits creativity and dynamic performance. The need for change is recognised, but there must also be legislation providing more flexible, less automatic career structures and job assignments, especially for students from the engineering schools.

- Breaking down the walls in the science and technology community. Entrenched barriers dividing educated manpower into separate, corporatist bodies must be broken down and bridges built between the educational, research, and industrial communities.

The mobility of researchers and others between establishments should be promoted through stronger incentives and sabbaticals on a European or even wider scale, as well as nationally. There should be more co-operation between university and industry.

Research by engineering students should be encouraged and the prestige of university engineers and scientists enhanced so that the highest level civil servants ("grands corps") would no longer be recruited solely through the *grandes écoles*.

To prevent the present elite from concentrating in its own hands the major responsibilities in the more important public and private institutions, a Ph.D. level or equivalent research experience should be considered as a condition to reach a given level of responsibility within the "Grands Corps".

2. Commit Resources to Technology Diffusion.

Government funding of programmes and policies to stimulate the diffusion of advanced and emerging technologies is called for. This implies the decentralization of funding from central government to the regions – so as to foster the growth of competitive markets which implement the diffusion of innovation. But bureaucratization of the regional systems must be avoided. Innovation policies aimed directly at small- and medium-sized enterprises and

the diffusion of generic technologies throughout the industrial fabric should be implemented. Further strengthening the ability of ANVAR⁴ to support local initiatives might be on the agenda, and mature sectors of the economy should be rejuvenated via the injection of new technologies. Low technology, low profit industries need special help.

Reforms in the financial system affecting innovation must be nurtured, as changes in attitude cannot be attained merely by promulgation of law.

The rigid rules and procedures for starting up – and stopping – new businesses must be simplified since a key to enduring success in innovation is the ability to make mistakes, accept them and learn from them.

3. Capitalize on the Big Programmes.

The impressive technological success of certain "grands programmes" has not yet been fully diffused into the market place. Their commercial fallout should be encouraged. The structure of the "grands programmes" can itself promote diffusion of technology throughout the industrial fabric if a wide network of subcontractors, especially small businesses, is involved. The national space programme has been successful in this respect, and the practice should be extended to other state-supported high-tech projects at reasonable cost, with the programmes' results being publicized as widely as possible.

The massive state effort involved in building up infrastructures (for example, the telecommunications network) can also provide opportunities for innovative firms, especially in the service sector.

4. Stress the European Dimension.

An effective European strategy will more than compensate for the apparent limitations of not being able to decide in isolation national economic and societal goals. The only workable approach is to think in European terms from the outset, despite the difficulties of doing so. ■

3. The Members of the team of examiners were: Viscount Etienne Davignon, (Chairman of the team), former Vice-chairman of the European Commission, Director, Société Générale de Belgique (Belgium); Professor U. Colombo, Chairman of ENEA – National Committee for Research and Development of Nuclear Energy and of Alternative Sources of Energy; formerly Chairman of OECD's Committee for Science and Technology Policy (Italy); Dr. A.P. Speiser, Director of Research, Brown Boveri and Company Ltd., Chairman of the R-D Committee of the Swiss Confederation of Industry; Professor J. Zysman, Berkeley Round Table on International Economics, University of California, (United States). Professor Zysman, assisted by F. Bar, Engineer at the Ecole Nationale des Ponts et Chaussées who was working at Berkeley at the time of the review, was rapporteur for the group.

4. Agency for the Valorisation of Research.

Deregulation and Privatization

Since adoption of the OECD Council's 1979 recommendation on promoting greater competition in exempted and regulated sectors of the economy, many Member countries have taken steps to open up previously regulated sectors, and some have begun to return state monopolies to the private sector. Although many of these measures have been taken too recently to allow a final assessment of their effectiveness, some seem to have had a positive economic impact in terms of prices and productivity, according to a report by the OECD's Committee of Experts on Restrictive Business Practices, which reviews developments between 1980 and 1985 in five key sectors – transport, postal and telecommunications services, broadcasting, energy and banking¹. The Committee is continuing its examination of experience with deregulation and privatization from the point of view of competition policy with the aim of monitoring how far economic performance has been and can be improved by particular measures as well as considering what limits there may be to such policies.

Certain economic activities, some of them of strategic importance, have traditionally been exempt from competition policy or subject to direct forms of public regulation because the market has not been considered an effective force in ensuring the efficient use of resources and the protection of the consumer. A prime example are industries considered natural monopolies, such as railways, postal services or electricity and gas supply, where technological conditions are such that there is room for only one viable enterprise in the sector. However, it has increasingly been recognised in recent years that these regulatory and protective measures may have impeded competition and worked against the interests of the consumer rather than the reverse, and this has led to the deregulation drive.

Deregulation in this context does not mean removing all the legal/administrative controls that constitute the regulatory framework for economic activities, like taxation, health and environmental controls, patent protection, and so on. What is involved is the removal or reduction of direct regulations governing entry to the sector, the type of products/services that can be offered, pricing and exposure to

competition. Deregulation can also mean limiting the administrative burden of complying with statutory controls and regulations, although that is not the primary concern of the report. Another feature of deregulation that is highly relevant, however, is privatization (the sale of all or part of state-owned corporations to the private sector).

Most OECD countries have taken deregulatory measures along the above lines. These have included: the outright abolition of regulations or the repeal of certain provisions (such as lifting or relaxing price controls); increased application of competition laws to previously exempted industries and professions; the relaxation of certain private or public monopolies (such as by more liberal licensing policies or breaking up monopolies into smaller units); and privatization.

In view of the evidence that some of their nationalized concerns have performed less well than private enterprises, several countries have actively pursued a policy of privatization. The outstanding example is the United Kingdom, where 12 major public enterprises were privatized between 1979 and 1985, involving the sale of public assets totalling £5½ billion and

the transfer of 400,000 jobs to the private sector. Other countries which are seriously considering privatizing state-owned enterprises include Japan and Germany.

While deregulation has focused on the above-mentioned five sectors in particular, some countries have also taken significant steps to break down the monopolies enjoyed by certain professions and to instill greater competition in these activities. This was the subject of a separate detailed report published in 1985 and is not included here².

Transport

The United States has taken the lead in eliminating statutory controls over airlines, railroads, trucking and bus services, starting with the Airline Deregulation Act of 1978 which gradually eliminated the Civil Aeronautic Board's jurisdiction over the allocation of routes, the setting of tariffs and the conclusion of agreements and mergers between air carriers. The process culminated with the abolition of the Civil Aeronautics Board in January 1985.

A series of acts passed in 1980 increased competition and reduced regulation in the trucking and railroad industries. In particular, entry into the trucking business was facilitated and collective rate-making was outlawed. Bus companies were freed of certain obligations by legislation passed in 1982 which relaxed the requirements for the introduction of services on new interstate and intrastate routes and made it easier for them to exit from unprofitable routes.

The United Kingdom has also been active in curbing monopolistic practice by state transport enterprises. British Rail (B.R.) and the British Airports Authority (B.A.A.) have come under particularly close scrutiny. B.R. has been censured for giving

1. *Competition Policy and Deregulation: Developments Since the Adoption of the 1979 Council Recommendation on Competition Policy and Exempted or Deregulated Sectors. Can be obtained from OECD Observer.*

2. *The OECD Observer, No. 132, January 1985.*



In transport, the United States has taken the lead in eliminating statutory controls.

exclusive rights to Godfrey Davis Europcar to provide car-hire facilities at certain stations and for operating a taxi franchise system at an individual station, for instance. Under government pressure, B.R. has introduced greater competition into its own procurement, through competitive tendering, for the supply of rolling stock and maintenance services. It is also giving priority to introducing competition to rail catering and the marketing of B.R. advertising space.

The U.K. government is also privatizing parts of the civil aviation industry, including the B.A.A. and British Airways (B.A.). It plans to dismember the B.A.A. and constitute individual airports as separate public limited companies. B.A. on the other hand is to be sold off to the private sector at the earliest practical opportunity. Bus services throughout Great Britain are being deregulated and privatized, moreover; the system of road service licensing (tantamount to quantity controls) is being abolished in favour of a system of registration, and local authorities will in future pay subsidies on the basis of competitive tenders for individual services rather than on a network basis without competition. The National Bus Company is also to be transferred to the private sector.

Australia has relaxed controls on domestic air freight to allow full competition between operators, and it is now reviewing its domestic aviation policy, long based on the maintenance of two airlines. The Australian government has also defied the International Air Transport Association (I.A.T.A.) by refusing to authorize the enforcement of I.A.T.A. tariffs and its directives on advertising, believing that air fares should be subject to free price competition and should be freely advertised.

Canada has also changed its regulations on domestic airlines to give carriers more freedom as regards pricing and the provision of competitive services.

In July 1985, the new government announced its transport policy in a discussion paper. The main objectives of the policy are to encourage actively both intra-modal and intermodal competition, to promote greater efficiency and lower costs on all transport services and to curtail the scope and complexity of regulations. For the airline business, it proposes to liberalize

entry and exit requirements, eliminate domestic tariff regulations and give carriers greater freedom to structure their financing and to acquire aircraft.

Germany is moving in the same direction as Canada as regards air transport, while Ireland has concentrated its attention on road haulage and is introducing legislation to provide for all licensed hauliers to compete on equal terms for all types of business (whereas at present many operate in exempted areas or are permitted to carry only certain sorts of goods). Four other countries — Japan, the Netherlands, Norway and Spain — have undertaken reviews, or adopted measures, to liberalize regulations in the transport sector.

Postal and Telecommunications Services

New technology has eroded the national monopoly enjoyed in almost all countries by postal and telecommunications authorities, and over the past five years several OECD countries have introduced measures diluting the existing monopoly, either by breaking it up altogether or by permitting private firms to manufacture equipment or supply private services as an addition to the network. Certain countries have also taken

The privatization of British Telecom involved the sale of 3 billion shares to the public.



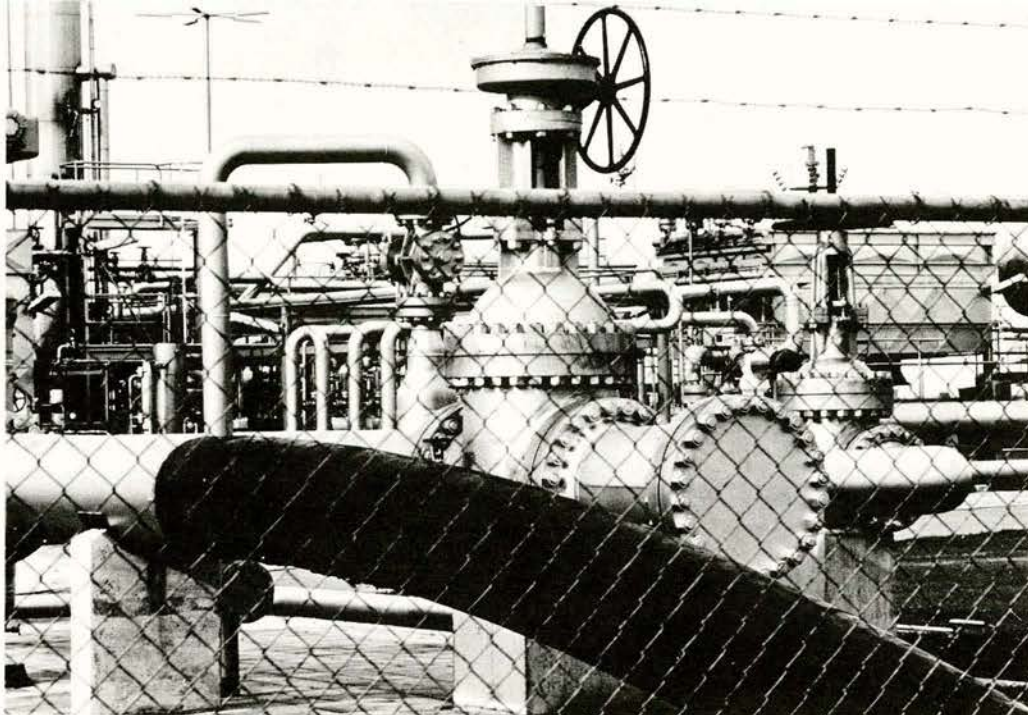
steps to separate postal services from telecommunications services and to allow private firms to compete for specific services alongside the existing service provider, usually state-controlled.

Far-reaching changes have occurred in the *United Kingdom* and in the *United States* in this sector. In the U.K., British Telecom (B.T.) has been privatized and the supply of services and equipment considerably opened up. The sale of 3 billion shares to the public in November 1985 was the largest ever share flotation. It was accompanied by legislation providing for all operators of telecommunications systems, including B.T., to be licensed and for a new regulatory body to monitor service providers and promote effective competition in the sector. The market for equipment and services had already been substantially liberalized; by 1983, over 300 items of telecommunications equipment had been approved for connection to telephone networks and over 68 schemes for value-added network services had been licensed.

The *United States* has brought about a considerable restructuring of the telephone industry following the break-up of American Telephone & Telegraph (A.T.&T.), which was required to divest itself of the assets used for local exchange telephone services. That took place on June 1, 1984. The resulting local Bell operating companies were reformed into seven independent regional telephone service firms to provide local exchange services. At the same time, the Antitrust Division finally succeeded at the end of 1984 in persuading the Governors of the Postal Service to terminate its electronic mail service. The Division had claimed that this service was being provided at less than cost and was thus being subsidized by other mail users. The low rates were also causing substantial and continued injury to private sector competitors. Before the Antitrust Division's intervention, the Governors of the Postal Service had twice rejected recommendations by the Postal Rate Commission to raise the tariffs for electronic mail.

Japan is following the British example and planning to privatize Nippon Telegraph and Telephone (N.T.T.). Although the share sale has not yet been organised, other measures have been introduced to promote competition in telecommunications services. N.T.T.'s monopoly has been abolished and new entrants have been admitted. *Norway* and *Sweden* have also relaxed the monopolies enjoyed by their respective telecommunications authorities to some extent, allowing private firms to compete for certain services alongside the state enterprise.

In addition, thorough-going reviews of telecommunications policy are under way



Canada, Germany, Spain, the U.K. and the U.S. have introduced measures to promote competition in energy markets.

in *Canada, Germany* and *Ireland*. In *Ireland*, in particular, two separate commercial semi-state companies were set up in 1984 to run the postal and telecommunications services respectively, formerly operated as government services.

Broadcasting

New technology has similarly inspired a number of OECD countries to liberalize their broadcasting systems, which in many cases are state-controlled, by allowing the entry of private operators. In the *United Kingdom*, where commercial television and radio services already exist, the 1984 Cable and Broadcasting Act also allows private operators to run cable television systems, and the government has since lifted the ban on direct reception by individuals of low-powered satellite broadcasts.

Germany has also introduced legislation providing for the licensing of private broadcasting operators in addition to the 12 government stations (two of which are federally operated and 10 *Länder* operated). *Finland* has authorized the creation of 33 private local radio stations and is preparing new legislation on cable services. And in the *United States*, where broadcasting is already a relatively wide open industry, the regulation prohibiting any one person from owning more than seven radio or television stations has been relaxed to increase the limit to 12.

Energy

Five countries — *Canada, Germany, Spain, the U.K. and the U.S.* — have introduced measures to promote competition in energy markets. In *Canada*, the federal government signed a comprehensive oil and gas agreement in March 1985 with the governments of the main hydrocarbon pro-

ducing provinces. Known as the Western Accord, it permits refiners and distributors to purchase oil from Canadian or foreign sources, with no restrictions on volumes and at freely negotiated prices.

The U.K. government has examined the ways in which the British Gas Corporation (B.G.C.) uses its monopoly position not only in its role as a supplier of gas but also in its function as a retailer of appliances. B.G.C.'s monopoly in the supply of gas has been removed by the Oil and Gas (Enterprise) Act, which allows third parties to supply large industrial users through B.G.C.'s own pipelines. Most importantly, though, the U.K. has ended state control of the British oil industry, by returning Britoil, Enterprise Oil and the onshore oil assets of the B.G.C. to the private sector. It is now planning to privatize the remaining corporate entity that is the B.G.C.

Germany has taken steps to place a time-limit on cartel agreements in the electricity, gas and water supply industries which have hitherto been exempt from the general ban on such practices. New agreements have to be notified to the cartel authority which may prohibit part or all of them if it considers they are anti-competitive. The Cartel Office has also banned some mergers and joint ventures in the energy field, on the grounds that they would give one company an unacceptably dominant position. In *Spain*, a 1984 Royal Decree authorizes private enterprises to import petroleum products and an 1984 Act provides for the injection of private capital into the petroleum refining and distribution industry.

In the *United States* there have been several government investigations and private actions in the energy field in the last five years, especially in the uranium and petroleum sectors. The Federal Trade Commission has intervened in two massive

takeovers — Texaco's acquisition of Getty Oil and Chevron's purchase of Gulf Oil — to require substantial divestiture of certain assets in both cases.

Banking and Securities

Most major OECD countries have taken deregulatory measures in recent years to increase competition between different types of financial institutions, to remove or relax controls on interest rates and bank charges, to reduce the barriers to entry as regards dealing in securities and to abolish fixed commission rates on stock exchanges.

In *Canada*, financial markets have undergone substantial change in the past few years following the revision of the Bank Act in 1980. In addition, a number of policy reviews are currently underway by federal and provincial agencies to identify appropriate regulatory and legislative responses to pressures for change in the structure of the financial services industry. A discussion paper was issued by the Federal Government in April 1985 containing proposals to encourage innovation and efficiency in the financial sector, while at the same time safeguarding the public interest in solvency and stability.

In *Germany*, a 1980 Amendment to the Competition Act introduced a system of control over hitherto exempted agreements in the banking and insurance sectors.

Attention in the *United Kingdom* has been focused recently on the operations of the Stock Exchange. The Stock Exchange reached an agreement with the government under which it undertook to abandon its minimum commission system before the end of 1986, as well as admit non-members to the Stock Exchange Council. The Government is also planning to introduce new measures to strengthen the protection offered to investors. A system of self-regulatory supervision will be developed subject to scrutiny by the Director General of Fair Trading.

A comprehensive reform of controls over financial institutions in the *United States* was enacted in the Depository Institutions Deregulation and Monetary Control Act of 1980. In particular, it provided for ceilings on time and savings deposits to be gradually lifted and for the authority to fix rates to be withdrawn unless economic conditions warranted otherwise. It also required banks, thrift institutions and credit unions to offer the equivalent of interest-bearing checking accounts and authorized thrift institutions and credit unions to make certain types of loans they were not previously permitted to advance. Finally, the Act gave a boost to competition in the provision of services by requiring the Federal Reserve System to price its services as though it were a private concern.

Japan has deregulated various aspects of banking and financial services in the past four or five years; banks have been allowed to enter some securities markets and to operate jointly with securities firms in some areas. The first steps have also been taken towards dismantling interest-rate controls. *Australia* has similarly moved to replace direct intervention by greater reliance on free market forces in the financial system. It is also one of a number of countries to have eased entry conditions into banking, especially as regards the establishment of foreign banks. *Finland* and *Sweden* have taken similar measures, while *Ireland* has dismantled the cartel arrangements, operated by its four associated banks, which included the fixing of interest rates.

Evaluating the Results

Assessing the effectiveness of deregulation in improving economic performance is not easy, insofar as many of these measures have been taken too recently to permit any definitive analysis. What evidence there is, however, especially as regards deregulatory initiatives in the U.S. and the privatization of state-owned concerns in the U.K., suggests that the effects have been positive.

In many cases, regulation results in cross-subsidization of unprofitable services by profitable ones, which distorts competition and penalizes some consumers while favouring others. Deregulation should have the effect of reducing the degree of cross-subsidy.

Regulation may also encourage the supply of high-quality, high-priced products and services, so deregulation could enable a wider range of price/quality options to be made available. This is because exposing previously regulated industries to competition pressures them into lowering costs and improving productivity. In the U.S., for instance, the 1978 deregulation of *air transport* has induced carriers to make economies in their mode of operations and has led to a significant fall in air fares, both for business and private passengers. New low-cost services have been introduced, with the overall result that the rents previously accruing to the regulated firms have now been passed on to the consumer.

The *trucking industry* has also undergone transformations as a result of deregulation. Firms have had to look for economies, leading many small and medium-sized firms to merge so as to derive the benefit of larger networks. But this has not brought a general increase in the degree of concentration of the industry: in 1982, the 100 biggest trucking companies in the U.S. accounted for 49 per cent of total industry revenues compared to 57 per cent in 1979. There has been an increase in bankruptcies, however, implying that regu-

lation might have protected inefficient carriers.

Concentration has intensified considerably in the *American railroad industry*, though, since deregulation has led to a number of major mergers. There have been evident economic gains, moreover, since railroad earnings, although below competitive levels for the economy as a whole, swung from a negative figure in 1976-1977 to a positive 6 per cent in 1979-1983.

In the *telecommunications sector*, the breakup of A.T.&T. cannot yet be said to have brought significant gains to consumers since the new system has only been in operation for 18 months. There are, however, three large providers of long-distance telephone services and numerous smaller operators in the U.S. now instead of only one previously. The seven regional operating companies hived off from A.T.&T. reported substantial profits in the first nine months after divestiture despite the resulting cost-price disadvantage. More appreciable benefits can be seen in the market for telecommunications equipment; fierce competition since deregulation has driven the price for telephone switching systems down to only half the previous level in some cases.

In general, these examples suggest that deregulation has increased efficiency, reducing the costs of services and raising productivity. On the other hand, competition authorities must ensure that deregulation does not give rise to attempts by dominant firms to abuse their monopoly positions.

As far as privatization is concerned, the motives have been much the same as those underlying deregulation and the effects have been similarly positive. The newly privatized firms in the U.K. appear to be performing well, with both revenues and earnings rising as a result of major efforts to reduce costs.

A number of questions remain to be satisfactorily answered in the current move towards deregulation and privatization however. The essential issue is for Governments to ensure that the newly deregulated and privatized industries operate both efficiently and in the public interest. Whereas direct regulation and public ownership can ensure against the exploitation of monopoly power, the reduction of legislative controls over concentrated industries may lead to abuses by the deregulated firms. Countries which return nationalized industries to the private sector might, therefore, need to consider introducing new provisions against monopolistic behaviour, such as allowing new firms to enter certain segments of the business or giving the competent authorities greater powers to effectively supervise private monopolies. ■

Lower Oil Prices: The Impact on Energy Policy

by Helga Steeg¹

There is one difficulty to be acknowledged at the outset of any assessment of how the fall in oil prices will affect OECD economies: nobody knows how long relatively low prices will prevail. Yet it does seem reasonable to accept as a basis for discussion that the imbalance between world supply and demand experienced over the past few years is unlikely to be eliminated quickly. Governments and industry must therefore look carefully at the longer-term implications of lower oil prices on the assumption – but not in the certainty – that they will be with us for some time.

The energy security aspect of lower oil prices is of special interest to the International Energy Agency. Alongside maintenance of an effective emergency oil sharing system, provision for the longer-term energy needs of Member countries has been the IEA's mission from the organisation's beginnings. It remains the IEA's task to make sure that energy conservation preserves its momentum, that the drive continues for greater efficiency in energy use, and that the move away from oil is not reversed. We must not allow ourselves to be distracted from longer-term energy considerations by present uncertainties.

In a nutshell, governments have to determine how their economies can derive maximum benefit from cheaper oil without building up problems for the future. Certainly, the overall economic effects will be positive, with increased growth and more jobs and spending power in the western world. Inflationary pressures will be reduced. Already the United States and other major economies have been able to cut interest rates. But it would be unrealistic to assume there is no risk in terms of energy policy. It will be the IEA's job to make sure the risks are acceptable.

What then are the potential risks? Cheaper energy will mean increased consumption, and possibly a reduction in investments in conservation. The development of new oil and gas in the IEA may to some extent be affected because the economics of exploration and development will

change. But the price of oil is only one of the factors that will influence decisions. Others are companies' financial structures and their long-term views of the economic and financial environment in which they will be operating. As this new energy situation continues, the objective must be to avoid becoming vulnerable again to supply disruptions, or the threat of disruptions, of the sort experienced in the 1970s. There is not a crisis situation, as some would have us believe, but developments will have to be monitored closely.

It should not be forgotten that the energy policies of IEA countries from 1974 onwards have been directed at achieving greater scope for the market function and reduced dependence on a source of energy that has to be imported from politically sensitive regions. Considerable progress towards both objectives has been achieved. However, this is now reflected in the present state of the oil market, and the attendant structural problems of the Western oil industry.

On the plus side again, there is no reason to fear that all that has been achieved over the past 10 years and more in terms of reduced dependence on oil, conservation, and increased energy efficiency can quickly be dismantled. The IEA expects that it will take some time for lower prices to work their way through the economy to end-users and find expression in increased energy demand. Many of the changes of the past decade were structural and largely irreversible. For example, car engines consume gasoline more sparingly, new buildings are better insulated, and new technologies tend to use up less energy than the technologies they replace. The move in many IEA countries away from energy-intensive "smokestack" industries to high technology production that uses less energy is also unlikely to be reversed.

The real question is not whether progress in energy savings will be lost, but at what rate it will continue. Even before the recent oil price slide, there was a slowing-down in improvements in energy efficiency simply because, in the nature of things, the

easy steps are taken first, and progress becomes continuously more difficult. Now, there is a danger that investment in conservation may suffer because cheaper oil and energy prices will lengthen "pay-back periods." Against that, of course, the general investment climate will improve.

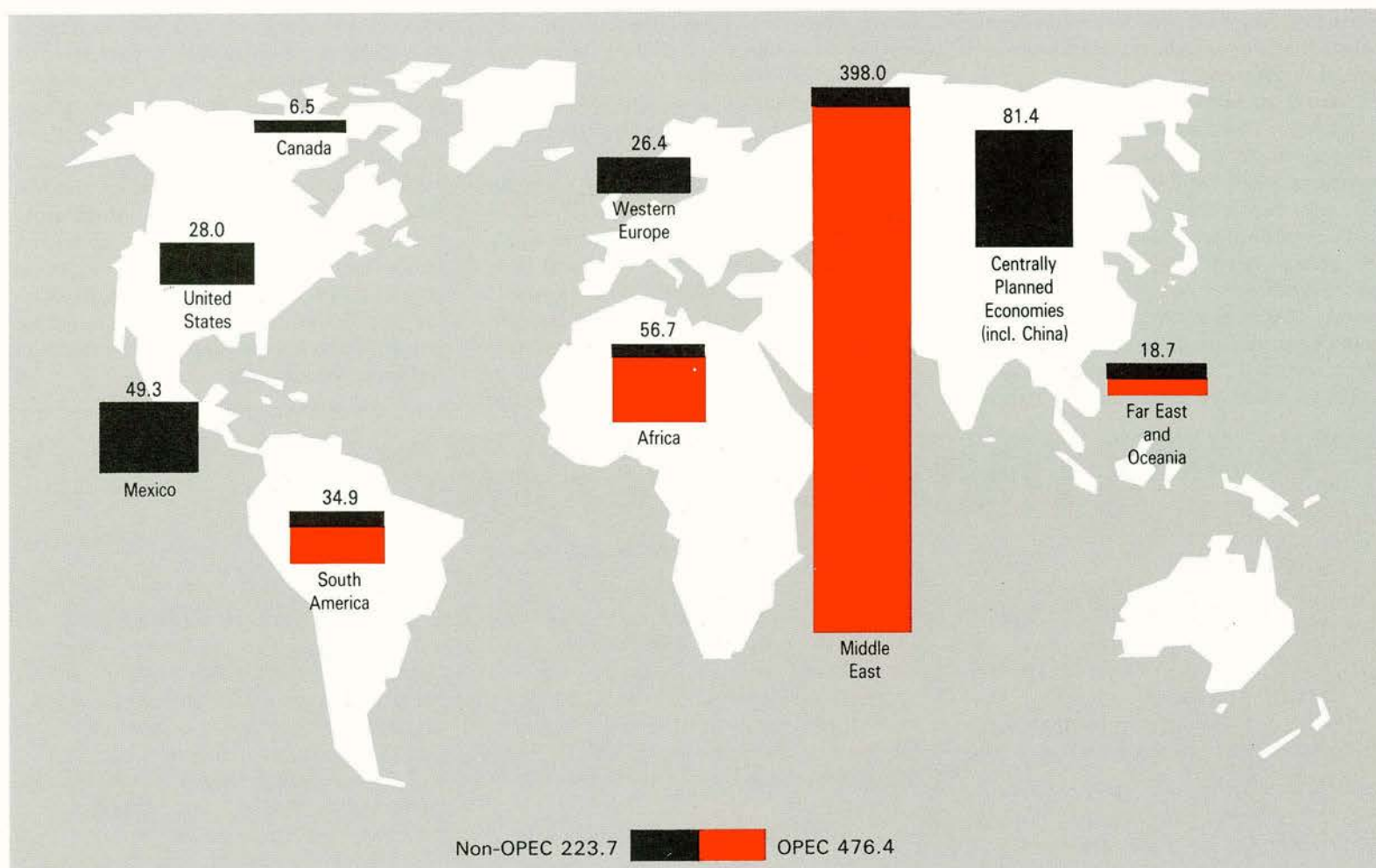
Many people I have spoken to recently about the current oil market situation commented that the IEA countries have accomplished what they set out to do from the early days, 12 years ago, at the time of the first oil shock. But to suggest that the task is finished is a curious way of looking at things, for it implies that energy policy is not dynamic but has fixed goals. Like painting a picture or building a house, when it is done, it is done. That notion is patently absurd, for the truth is that, as the oil resources of the IEA countries are depleted, we shall have to rely more and more on supplies from one region of the world, the Middle East (see map). This is a region that has suffered more than its share of war and political instability, but happens at the same time to contain 60 per cent of the world's known oil reserves outside the centrally planned economies.

The inference is clear: the IEA's tried and tested policies must be maintained. IEA ministers, meeting last July at a time when the market was already weak, endorsed this stance. The Ministerial communiqué stated their agreement: "that it would be imprudent and even dangerous for IEA countries to ignore forecasts of the IEA, governments and industry, which point to tightening energy markets in the 1990s, especially for oil. Instead, they reaffirmed that providing adequate and secure energy sources in a way which complements efforts to promote economic growth, remains the major objective which governments have for the IEA. They therefore forcefully underlined the importance of reducing future risks by maintaining the energy policy directions already estab-

1. Executive Director, International Energy Agency (IEA). Based on a speech given to American Enterprise Institute for Public Policy Research, Washington D.C.

WORLD'S PROVED CRUDE-OIL RESERVES

Jan. 1, 1986 700 billion barrels



lished in the IEA." On April 10 this year, the IEA Governing Board reconfirmed these policy objectives, and noted that their purpose is to achieve a better balance between supply and demand. This is the way to further both the long-term stability of market conditions and our energy supply security.

So the IEA's task is manifestly a continuing one. The current situation simply cannot be allowed to become an excuse for wasting time. True, there has been a spectacular change for the better in the way the industrial countries use energy, even though the cost of the oil price hikes of the 1970s in terms of lost economic growth has been enormous. Between 1973 and 1984 there was a 28 per cent reduction in oil use per unit of gross domestic product, and corresponding shifts towards greater use of coal, natural gas and nuclear power. There was also a 19 per cent decline in *total* energy use by unit of GDP. In other words, overall energy efficiency improved by about a fifth.

There should be no misunderstanding about the reasons for this development, which transformed a sellers' market for oil into a buyers' market, and helped to bring about the oil market conditions — and the economic opportunities — facing the OECD countries today. The fundamental cause

was the reaction of markets to the excessive cost of oil, aided by government policies that permitted the market to carry out its corrective function.

It was a graphic example of how markets tend ultimately to assert themselves despite attempts to fix prices, quotas, or production ceilings. And I firmly believe that the process was accelerated by the emergence of a more transparent energy market, with heightened competition among energy sources, and among suppliers from different regions. As far as possible, that market should remain unrestricted, for this fosters the most efficient use of energy resources.

It is, incidentally, reassuring to see that pressure from some quarters in the United States for the introduction of an oil import fee has abated. The present Administration has rightly expressed its opposition to such a measure on the grounds that it would, in the words of the White House spokesman, be both "bad policy" and protectionist in character. There can be no doubt that an oil import fee would be against the spirit of decisions taken by IEA ministers last July. The ministers then agreed to avoid or dismantle restrictions on imports of oil products. One result of that decision is that Japan has for the first time opened up its market to permit some imports of gasoline

and kerosene. That is a welcome and significant development in the direction of freer energy trade, and one to be encouraged by good example.

Quite a few governments meanwhile decided to use the drop in oil prices to boost fiscal revenues. This is understandable for countries with heavy budget deficits and does not affect international energy policy. But it would be an opportunity lost if governments failed to pass on as much as possible of the benefit of lower oil prices directly to their economies. I am convinced that the macro-economic gains to be derived from lower oil prices can best be achieved by allowing them to be transmitted through lower prices to final consumers. Furthermore, what will happen next on the oil market is as difficult to foresee as the movement of exchange rates. And taxes, once introduced, cannot easily be abandoned. This does not imply any stalling of what I would describe as our "energy conscience" particularly as it relates to development of the indigenous resources of IEA countries. This aspect will have to be most carefully watched.

This examination of the current oil market situation would not be complete without an explanation of the IEA's response to suggestions that it might assume some role in fostering a dialogue

among OPEC and non-OPEC producer countries, like Britain and Norway, to stabilise oil prices by restraining production. Those two countries, of course, have made it clear that they would not be prepared to restrict production.

Leaving aside my own market-oriented convictions, there are a number of overriding practical difficulties in the way of steadying prices by this sort of collaboration. First, influencing the supply of commodities on world markets through production levels needs the agreement of all major producers, not just a few. It is unlikely that cuts by North Sea producers would be large enough to have a significant effect on the market. Some way of asserting effective discipline is needed.

Then there is the problem of determining the price level, given different national interests and circumstances. Would consumer interests be considered? IEA governments take the view that it is for the operating oil companies to decide what their production levels should be, and that prices should be determined by supply and demand.

This then is how the present situation looks from the viewpoint of the IEA. It is clear that it will take some time for a thorough assessment of the long-term implications to be made. Careful analysis will be needed, and the evidence is far from complete. Of course, there are potential risks for the IEA's long-term energy security objectives. At the same time, the

achievements of the past will not disappear from one day to the next. Any changes in energy habits will take time to develop and make themselves felt. So we do have a breathing space in which to decide what the energy policy response of IEA governments should be. That breathing space must be used wisely, and it is here that I see the task of the IEA in the coming months. I refer again to the conclusions of the IEA Governing Board on April 10, which state that no new action in the area of energy policy is required at the present time. As we continue with our existing policies, it will be for IEA Governments to decide whether adjustments are needed, in the light of further developments. ■

A Historical Perspective

by J. Wallace Hopkins¹

- Oil consumption in OECD countries fell from over 41 million barrels a day (mbd) in 1979 to 34 mbd in 1985 in response to the sharp price increases of the 1970s and government policies aimed at reducing dependence on oil.

- Oil output from OECD and other non-OPEC countries increased by over 10 mbd between 1975 and 1985 as a result of investment decisions made in the 1970s, again spurred by higher prices and government policies.

These two developments resulted in: — A substantial surplus, now estimated at 8-10 mbd, in crude oil production capacity in many traditional exporting countries. Surplus capacity in Saudi Arabia alone is around 4-5 mbd.

— Increasing competition between exporting countries in the crude oil market.

- Crude oil prices, denominated in US dollars, have fallen steadily since the end of 1981. Exporting countries which resisted adjusting their prices to market conditions were confronted with reductions in sales volume, particularly during the Spring and Summer when consumption is lower than in the rest of the year.

- Saudi Arabia resisted lowering its prices, and its production fell to around 2 mbd in the summer of 1985, substantially affecting revenues. This, and possibly political and strategic concerns, led the Saudi government to shift towards a more flexible pricing policy, known as "netback" pricing, under

which crude prices are directly linked to the buyer's revenue from refined products and contain a built-in profit margin for refiners. Reasons for the Saudi action may have included a wish to restore discipline within OPEC, and to improve the long-term competitiveness of oil.

- Netback pricing led to increased liftings of Saudi crude, to over 4 mbd in the fourth quarter of 1985. But the competitive market impact of higher Saudi output was not fully visible until later, because it coincided with the seasonal factor of expanding purchases of crude oil in anticipation of winter demand.

- By early December, substantial volumes of crude oil were reaching consumer markets faster than they could be sold as products, leading to a counter-seasonal stockbuild. The Saudi Government stated its intention to keep production at 4 mbd or more. Other producing countries started to introduce more flexible pricing and other incentives aimed at maintaining their share of the market. Towards the end of 1985, this combination of competitive pressures, plus relatively warm weather, rapidly pushed down the spot prices of refined products, particularly heating oil. This had an immediate downward impact on crude oil prices, which was partly reinforced through the netback pricing mechanism. In March and April 1986, OPEC countries met to discuss oil production levels and prices. In April, a communiqué said that 10 of its 13 members had agreed to set a production ceiling of 16.7 mbd for 1986.

Current Market Conditions

- The average cost of crude oil processed in IEA countries in April was about \$15 a barrel. Some crude oil was acquired at spot prices quoted in the \$10-\$13 a barrel range, but substantial volumes of widely traded crudes (e.g. Saudi Arabian) were reportedly being purchased at higher prices.

Further short-term crude price developments are highly unpredictable, as they depend mainly on the following factors:

- Liftings — and thus production levels — in oil-exporting countries in the face of the customary 2-3 mbd seasonal demand decline in the Spring and Summer;
- The pattern of consumption in response to lower product prices, as well as any temporary product imbalances which can have a substantial effect on the product value of crude oils;
- Stock behaviour: although there has been a strong tendency among companies to reduce stockholding costs whenever possible, stock behaviour is also strongly influenced by expectations as to future price movements;
- Whether Soviet oil exports will follow their normal seasonal pattern and increase in the Spring;
- Decisions which might be taken by OPEC countries, and possibly other exporters, regarding production levels;
- The timing and extent of oil field maintenance programmes.

1. Deputy Executive Director, IEA.

Personal Income Taxes Current Policy Issues

by Rintaro Tamaki¹

Personal income tax systems have given rise to increasing discontent in recent years on a number of grounds: complexity, unfairness, adverse effects on economic growth and on decisions about savings and work. At a time when major reforms of such taxes are under consideration in a number of OECD countries, OECD's Committee on Fiscal Affairs has just published two reports on why and how personal income tax systems have been evolving over the last decade, with suggestions about likely future developments².

substantially in countries with low income taxes, except for Turkey, and remained stable or even declined in high income-tax countries (New Zealand and Belgium excepted).

The Largest Source of Government Revenue

Over the last twenty years, personal income taxes have been the most important single source of revenue for the majority of OECD countries. In 1983, yields from such taxes represented about a third of total tax revenue (unweighted average of 22 OECD countries, excluding Portugal and Iceland) as against a quarter in 1965, and the ratio of tax yield to GDP

has been nearly 12 per cent in the 1980s as against 7 per cent in 1965.

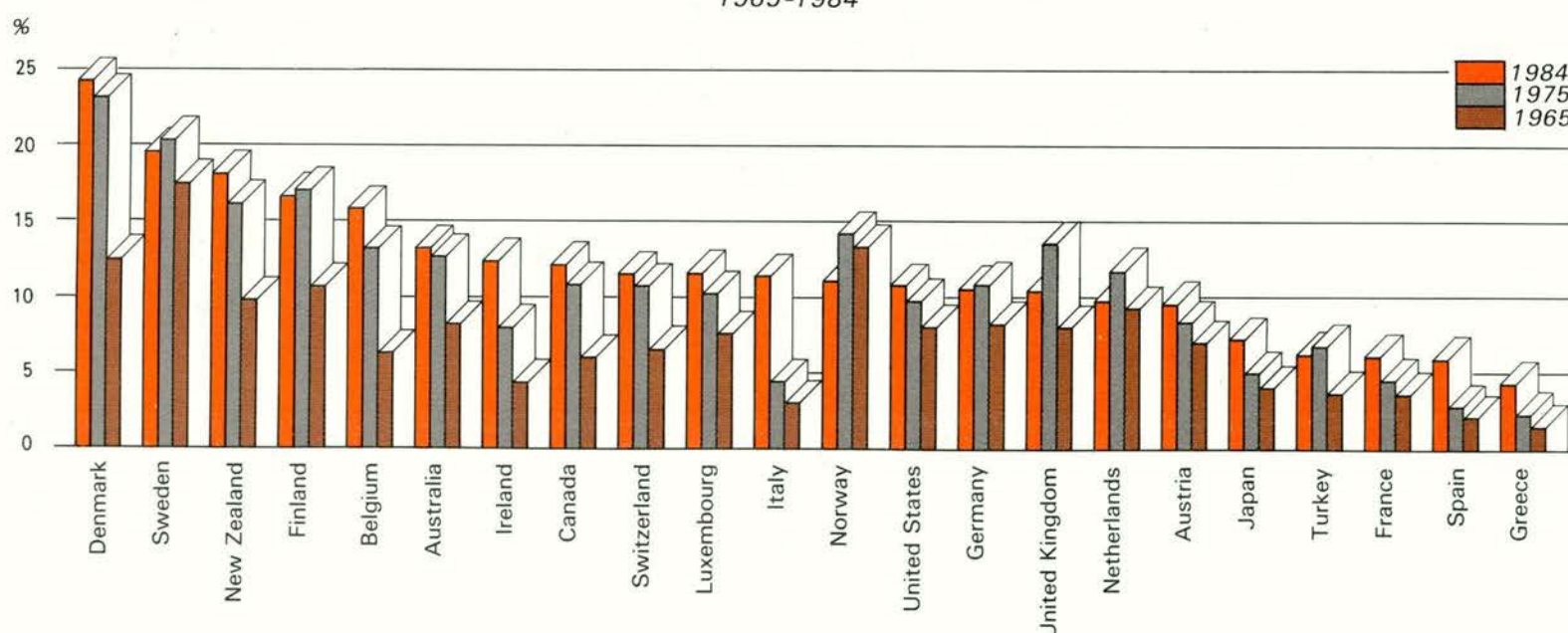
As chart A shows, the ratios are highest in the Nordic countries (except for Norway) and in New Zealand and exceptionally low in the Mediterranean area and in Japan. They rose substantially between 1965 and 1975 in the Northern European countries and outside Europe but not in Southern Europe. Since the mid-Seventies, in contrast, there has been a convergent trend: personal income tax ratios have risen

Reform Proposals

One of the reasons why the increase in the personal income tax burden was relatively acceptable to taxpayers until the early 1970s is that it was accompanied by an increase in real personal income. But by the mid-Seventies, when inflation had become much higher, offsetting its effects on income tax systems became a matter of concern in many countries. In the absence

1. OECD's Fiscal Affairs Division.
2. "Personal Income Tax Systems under Changing Economic Conditions" and its technical supplement, "An Empirical Analysis of Changes in Personal Income Taxes".

A. PERSONAL INCOME TAX RECEIPTS AS PERCENTAGE OF GDP
1965-1984



Note: Countries are ranked by 1984 figures, except for Australia, Belgium, Greece, Italy, Japan, Spain and the United States where 1983 figures are used.

Source: Revenue Statistics of OECD Member Countries, 1965-1984, Paris, 1985.

B. THE DEDUCTIBILITY OF INTERESTS PAYMENTS 1983

	Interest on loans for:						
	Investment for business purposes	Home purchases or improvements		Principal residence	Secondary residence	Consumer purchases	Other purposes
		Principal residence	Secondary residence				
Australia	■	◻ C	●	●	●	●	
Austria	■	■	●	◻	●	●	
Belgium	■	◻	◻	●	●	●	
Canada	■	●	●	●	●	●	
Denmark	■	■	■	■	■	■	
Finland	■	■ C	■ C	■ C	■ C	■ C	
France	■	■ C	●	●	●	●	
Germany	■	■	●	●	●	●	
Greece	■	■	●	●	●	●	
Ireland	■	■ C	■ C	■ C	■	■	
Italy	●	■ C	■ C	●	●	●	
Japan	■	◻	●	●	●	●	
Luxembourg	■	◻	◻	■	■	■ C	
Netherlands	■	■	■	■	■	■	
New Zealand	■	■ C	●	●	●	●	
Norway	■	■	■	■	■	■	
Portugal	●	■	n.a.	●	●	●	
Spain	■	■	■	●	■	■	
Sweden	■	■	■	■	■	■	
Switzerland	■	■	■	■	■	■	
Turkey	■	●	●	●	●	●	
United Kingdom	■	■ C	●	●	●	●	
United States	■ C	■	■	■	■	■	

C Ceiling

● Not Deductible

n.a. not available

■ Tax Allowance Fully Deductible

◻ Tax Allowance Partly Deductible

■ Tax Credit Fully Deductible

◻ Tax Credit Partly Deductible

of offsetting measures by governments, real tax burdens increased in two separate ways: the value of fixed-amount tax reliefs was eroded while, because of progressive tax systems, taxpayers moved into higher tax brackets as a result of increases in nominal income, even though they had no rise in real income. With the more recent drop in inflation, low economic growth and high unemployment, other problems have come to the fore, and personal income tax reform is now a major subject of debate in most OECD countries. In many of them, tax

reform commissions, whether official or unofficial, have been established for this purpose (see insert page 24). Since country situations differ so much and personal income tax changes generally involve trade-offs, any universal solution for improving the equity and/or economic efficiency of these taxes is unlikely. Nevertheless, the problems of present personal income tax systems being addressed by tax reform commissions are strikingly similar from country to country, and the solutions proposed also have a similar tenor, there

being less concern with vertical equity and more with horizontal equity and reducing the economic inefficiencies that can result from personal income tax systems.

The Diversity of Income Tax Techniques

Governments have many ways of differentiating the tax bills of different taxpayers, according to the source of their income, their family status and the way in which they spend their income. The methods and amounts of reliefs for work expenses, children, charitable contributions, etc. vary greatly between countries.

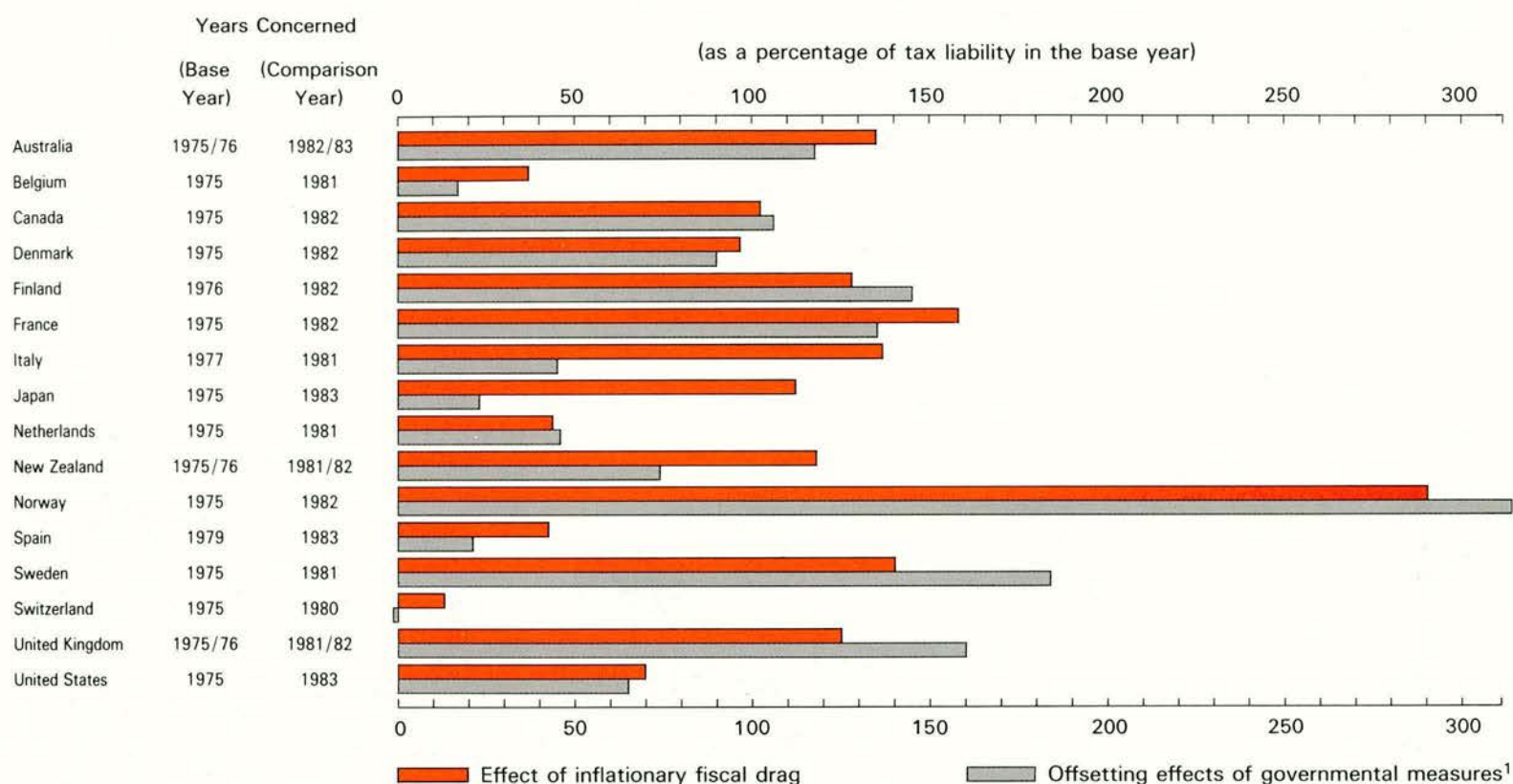
Chart B provides an example of differences in the way that countries allow relief from tax for interest payments. It varies from complete deductibility in the Nordic countries, the Netherlands, Switzerland and the United States to almost complete non-deductibility in Canada and Turkey. Column 2 of the chart shows that interest on loans incurred for the purchase of a principal residence may be fully deductible, partially deductible, deductible up to a maximum amount (ceiling) or not deductible at all. Moreover, the deduction may be from income subject to tax (tax allowance) or from the tax payable (tax credit). The significance of this latter distinction is that, under progressive income tax systems, higher income earners are subject to higher rates of tax, so that tax allowances are of greater value to them, whereas tax credits do not generally vary with income earned.

Reform: Conflict Between Aims and Constraints

One of the problems of tax reform is that the objectives of income tax policy may conflict. The main function of income tax – to provide revenue – may for example clash with tax concessions designed to encourage investment or meet other economic and social objectives, while higher progressivity to promote a redistribution of income may conflict with the need to encourage work effort.

Although there has been no shortage of radical tax reform proposals, modifications to personal income tax systems have tended to be gradual; first, because the evidence remains equivocal on the precise economic effects of some income tax provisions; second, because drastic changes to them inevitably entail winners and losers. The latter often form more effectively organised pressure groups, while the majority of taxpayers who would benefit from such reforms tend to be less vocal as the gains are more widely dispersed. Finally, on a more mundane level, tax reform may be frustrated by practical and administrative problems such as lack

C. OFFSETTING INFLATIONARY FISCAL DRAG BY GOVERNMENTAL MEASURES



1. Governmental measures include changes in tax laws and formal indexation, the latter of which was in force in Australia, Canada, Denmark, France, the Netherlands, Sweden and the United Kingdom during the reference periods.

Note: If the upper bar is longer than the lower one, inflationary fiscal drag has not been fully offset. If the reverse is true, fiscal drag has been more than fully offset.

of trained staff or computer facilities to implement it.

Nevertheless, tax reform proposals are generally a useful way to encourage a debate on personal income tax systems and help to put the problem on the political agenda. Though drastic tax reform is thought to be easier under favourable economic conditions, it is only during recent years, with widespread concern about the performance of economies, that personal income tax systems have become so publicly debated in many OECD countries. For this reason, the chances of personal income tax reform may be greater than for some years.

Approaches to Equity and Efficiency

Improving Fairness

In a number of countries, the progressive income tax system is being increasingly seen by both governments and taxpayers as unfair. Various tax concessions enable some citizens to avoid or reduce their tax bill, while others with equal or lower incomes cannot. These differences have generated resentment among taxpayers which has, in some cases, been translated into tax avoidance schemes, barter, moon-

lighting (i.e. taking an undeclared second job), more emphasis on fringe benefits in employees' remunerations³ etc. and these "solutions" have further increased the unfairness.

Recent changes – or proposals for change – in OECD countries have pointed towards:

- Flattening *tax rate* schedules: the highest tax rates declined in nine countries between 1975 and 1983-84 (e.g. in the United Kingdom from 98 per cent to 60 per cent and in the United States from 70 to 50 per cent, with 35 per cent or 38 per cent currently being proposed).
- Widening the *tax base* on which personal income taxes are imposed. This may be done by:

- including in the tax base sources of income that were previously exempt (e.g. capital gains)
- eliminating or reducing tax reliefs or subsidies provided through the tax system to promote economic and social goals
- bringing fringe benefits into the tax base at their market value.

- Reassessing the relative tax treatment of different *sources of income* and treating them more equally in some countries. Among the measures that have already been taken are:

- the elimination of higher rates on investment income (as in the United Kingdom)
- the replacement of systems in which tax authorities negotiate the amount to be paid with taxpayers (e.g. farmers) by a more accurate system of assessment (as in France and Italy).

- Combating tax avoidance and evasion: there is growing resentment at these practices, particularly by wage and salary earners whose tax is usually deducted at source and whose opportunities to avoid or evade taxes are therefore slight, though even they may be able to indulge in moonlighting. Countries are tending to tighten laws and improve tax investigation techniques.

Economic Efficiency

Taxation is thought to affect the amount and direction of household saving (and borrowing) and work behaviour.

- *Incentives to Save and Invest*

Personal income tax provisions have generally favoured certain forms of savings

3. Among the most important of these fringe benefits are company cars, loans at lower rates of interest, employers' contributions to private insurance and living accommodation.



Glossary

Vertical Equity

The equitable differential tax treatment of persons who have different levels of income and/or capital

Horizontal Equity

The equitable tax treatment of persons with the same level of income or capital but who differ in other relevant respects

Fiscal Drag

The more than proportionate increase in income tax corresponding to an increase in income. When income of a taxpayer increases by 10 per cent in two years, income tax may increase by 15 per cent under the progressive income tax system. The difference of 5 per cent is fiscal drag. Fiscal drag may be divided into "inflationary fiscal drag" which corresponds to a change in income due to inflation, and "real fiscal drag" which corresponds to a change in real income.

Formal Indexation

Regular and automatic adjustments made within the framework of specific legislative provisions which are, at present, in force in Canada, Finland (very partially), France, Luxembourg, the Netherlands, Switzerland, the United Kingdom and the United States.

— investing in private pensions and life assurance, small saving schemes and home ownership. Although saving for retirement is seen as a desirable aim, concern has been expressed that some of these very favourable tax treatments may discourage investment in the risk-taking types of venture which are more likely to increase employment. Most reform proposals have accordingly pointed out that policies should focus on limiting and trying to prevent saving patterns being distorted by tax considerations, even though the evidence that tax incentives affect the pattern of savings is by no means clear.

• Incentives to Work

Taxpayers and economists have long thought that personal income taxes induce changes in individuals' work behaviour. Yet, the theoretical and empirical evidence on the size and direction of such effects is not conclusive. It is generally agreed that different types of taxpayers will respond to taxation in different ways. For example, wives who are secondary earners seem more sensitive to taxation than primary wage earners who have less choice as to whether or not to work. However, it is widely believed that high income tax rates do have an adverse effect on work effort and risk taking and provide inducement to taking jobs in the underground economy. This is thought to be another reason for reducing high marginal income tax rates and widening the tax base (particularly by taxing unemployment and sickness benefits).

Adjusting for Inflation

The policy choices and the appropriateness of formal indexation provisions are still under discussion, and practice differs considerably among countries. As between *ad hoc* adjustment and formal indexation, there has been no one-way move, since in recent years Switzerland and the United States have adopted formal indexation at a time when Australia, Denmark and Sweden have abandoned it. Nor does there seem to be any evident correlation between formal indexation and the degree to which inflationary fiscal drag has been offset, since some countries without indexation fully offset (or more than fully offset) the effects of inflation while others having indexation may apply it only partially or not at all.

Chart C summarizes some of the results of an empirical analysis identifying those factors which might have had an effect on personal income tax liabilities: changes in the number of taxpayers, in income distribution, in income (particularly inflationary and real fiscal drag) and in governmental measures (formal indexation and *ad hoc* changes in tax legislation). Among these, inflationary fiscal drag has been the main cause of upward pressure on personal income tax rates. However, Chart C, comparing the effects of this with that of governmental measures, shows that, in most countries, inflationary fiscal drag has substantially been offset by governmental measures, though in some (Switzerland, Italy, Japan, Belgium and Spain), only a small part of it has been offset.

National Tax Reform Commissions

Country ¹	Name	Date of report
United Kingdom	Meade Commission	1978
New Zealand	McCaw Task Force	1982
Ireland	O'Brien Commission	1982
Sweden	Income Tax Reform Commission	1982
Norway	Royal Commission	1984
Australia	Reform of the Australian Tax System	1985
United States	The President's Tax Proposals to Congress for Fairness, Growth and Simplicity	1985

1. Earlier tax reform reports include the Carter Commission in Canada (1966), and the Asprey and Mathews Reports in Australia (1975).

The Young Adolescent and Comprehensive Schooling

by John Lowe¹

Primary or elementary education, though not without its worries, is in a reasonably stable state in OECD countries today. Its greatest challenge is how to identify and diagnose the weaknesses of children with learning impediments at the earliest possible age so as to help them master the basic skills of reading, writing, oral expression and calculating before moving on to the secondary level at eleven or twelve. In contrast, lower secondary education is presenting serious problems for education authorities and teachers and here and there arousing considerable public disquiet². This is the reason why OECD decided to undertake a study of this particular sector which concerns pupils aged between 11 and 16 and coincides with the final years of compulsory schooling and the first stage of secondary education.

Many of the problems of lower secondary education affect all pupils regardless of their abilities since they have to do with the relevance of the curriculum, alternative forms of school organisation, and how to choose the most effective pedagogical methods. But the main problem concerns the immutable fact that a significant to large percentage of pupils appears to be gaining no benefit from all the hours they spend under a school roof and are leaving as soon as possible without having acquired a sound basic education and a recognised qualification. In some urban schools unruly behaviour and even vandalism are rife, truancy is so prevalent as to be overlooked, and the most disgruntled adolescents are simply abandoning school before the statutory leaving age.

There is no lack of explanations for the contemporary problems of the lower secondary school. Any resourceful columnist, television pundit or politician, short of a newsworthy inspiration, can assemble a battery of criticisms, apportioning blame to permissive teachers, inept administrators, lax parents, declining public morals and various other culprits. It is important, however, to keep the problems within a rational perspective for there is no evidence of a general crisis in the schools in any OECD country. On the contrary, most of them are performing quite successfully, at least in the eyes of a large majority of parents, pupils and teachers. This is not to imply that there is no room for improvement. Any school, like most social institutions, is potentially capable of raising its performance. Moreover, education authorities have come to recognise in recent years that the performance of schools can vary

greatly even when they dispose of similar resources and serve similar socio-economic populations. There is every reason, then, to impel the less successful schools to do better.

Moreover, cause for alarm or even for evoking the menace of a crisis is warranted by the existence of the large *minority* of young people whose needs are not being satisfied by the sort of education provided. This would be so even if they were distributed more or less evenly throughout school systems. As it is, they tend to be concentrated in schools situated in neighbourhoods suffering from multiple social and economic disadvantages. In other words, all the schools in a given district may contain a high percentage of under-achieving pupils whereas, elsewhere, the proportion of low achievers in each school may be very low and certainly manageable by resourceful teaching.

A 'Comprehensive' Solution

It so happens that the problems of lower secondary education have come to loom large at the very time when most OECD countries have extended the statutory school leaving age to 15 or 16 and completed the organisation of their schools along comprehensive lines. The United States, of course, adopted the common or comprehensive school from the inception of publicly provided education over a century ago. In other OECD countries, however, the comprehensive model dates mainly from the Second World War, though it has spread so rapidly and to such an extent that only a few countries still retain selective systems after the primary

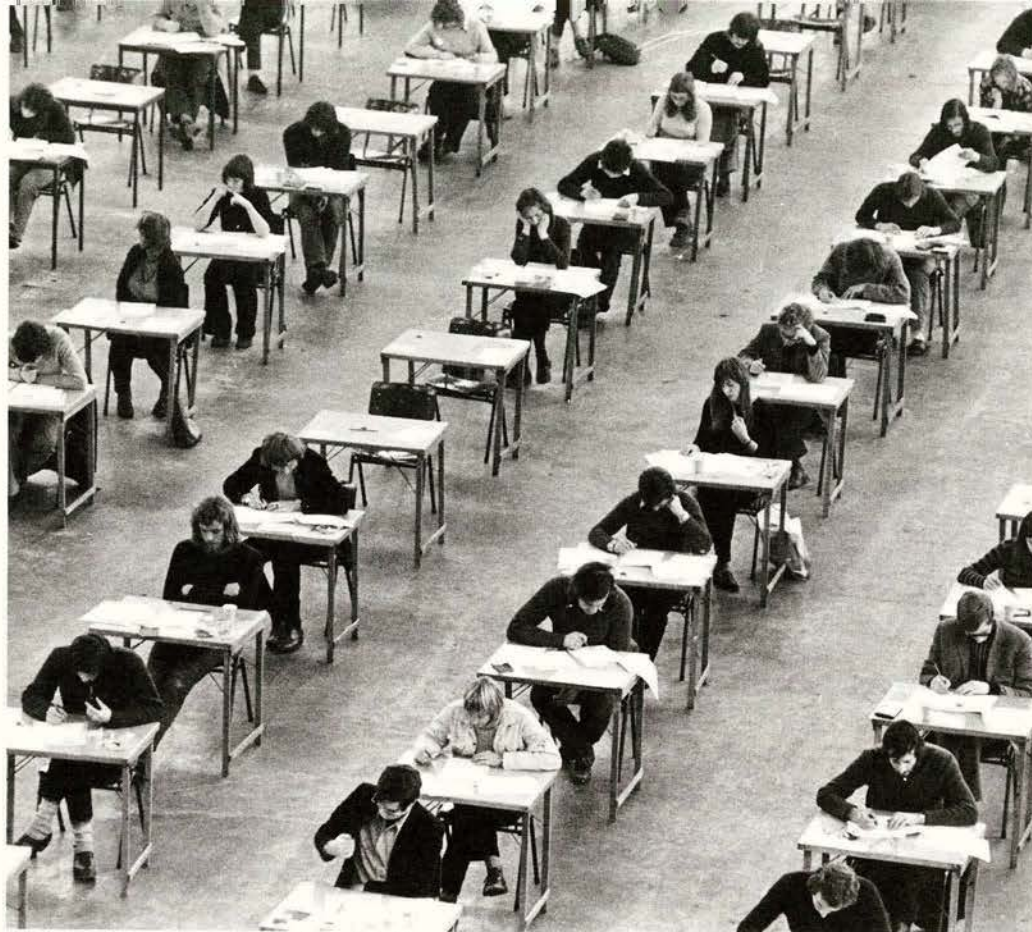
school. So, today, we can say that, for the first time in history, all young adolescents are required by law to remain in school (or in education) and, in the majority of countries, in a school that is comprehensive.

The main reason for going comprehensive has been to enhance the life chances of all young people, whatever their socio-economic backgrounds or individual disadvantages, by enabling them to share a common educational experience during their formative years. This presupposes that they should all pursue studies previously confined to a select minority and defer making choices about their future academic or working careers until the age of fifteen or sixteen. There should be as little differentiation as possible in the kind of learning experienced and a common leaving examination for all.

Today, however, no one can have any illusions about the difficulty of achieving the goals underlying the generalized establishment of the comprehensive lower secondary school. Indeed, the problems are greater than ever before. For this, several explanations or a combination of explanations may be adduced. The first is dismissive, namely, that the very conception of comprehensive schooling was misguided. After primary schooling it is only realistic to place pupils in separate schools according to their academic ability. Going comprehensive was an unfortunate aberration. The second is that most of the difficulties have been caused through having to cope with the whole age group up to 15 or 16 rather than only up to 14 or below that age. The third is that many schools have become comprehensive only in so far as their pupils come from a single neighbourhood or zone; internally, they still practise selection and discrimination against low achievers. The fourth is that external circumstances have changed so dramatically in recent years, notably through the high level of youth unemployment, that the whole purpose of lower secondary schooling is called into question whether it be comprehensively organised or not.

1. Education and Training Division, OECD's Directorate for Social Affairs, Manpower and Education.

2. See, for example, Compulsory Schooling in a Changing World, OECD, Paris, 1983.



Their training leads teachers to be guided by public expectations hence an emphasis on competition, grading and testing.

The Experience of Four Countries

Against this uncertain and controversial background, the OECD, under the work programme of the Education Committee, has undertaken an inquiry into how the comprehensive school is functioning in four countries with contrasting cultures and educational traditions – Denmark, France, the United Kingdom as represented by Scotland, and the United States, as represented by the States of Maryland and Minnesota. These countries vary in size, in the locus, machinery and style of educational control and management and in the duration of their experience of schools comprehensively organised. All however face common problems: public disquiet over the management of educational resources; the ability of current processes of teaching and learning to achieve the high quality of outcomes that society increasingly demands; the relevance of the curriculum provided for adolescents in the light of changes in the cultural climate, structural upheavals in the labour market and intensifying technological innovation. In addition, all are concerned with how to assess individual achievement and the performance of schools in an equitable and efficient fashion, with the consequences of the widening roles of teachers and with new relationships between school culture and everyday life in society at large. And they all face, in varying degrees of intensity, the problem of how to serve the interests of low achievers. Their exper-

iences are to a large extent valid for other OECD countries.

All four countries express an unshakable commitment to the principle of comprehensive schooling for adolescents. At the same time, they fully recognise that crucial reforms must be introduced in the internal organisation of schools, the content of the core curriculum and pedagogical styles and methods. They show a particular concern, too, for individual needs, especially those of low achievers, reappraising the functions of teachers and principals, programme evaluation and school accountability. They also share a commitment to the public comprehensive school that is not exclusive since it accepts the existence of a significant *private* comprehensive sector, most conspicuously in France and Denmark, and independent, non-comprehensive schools in Scotland and the United States.

Although its internal organisation varies between and within the four countries, the comprehensive school incorporates at least these characteristic elements:

- It is a neighbourhood or district school unless, as in the United States, an overriding legal obligation to achieve ethnic desegregation requires pupils in some educational jurisdictions to be transported from one area to another.
- All pupils follow an approximately common curriculum at least to age fourteen.
- Although internal differentiation and grouping of students according to aptitude and ability are practised in some schools, it

is generally understood that mixed ability grouping will be the norm either for age levels up to thirteen or fourteen or for subject areas.

- From ages fourteen or fifteen onwards, however, public policy accepts or indeed promotes streaming or setting into groups according to ability or future occupational choice, personal interests and individual differences in school attainment and performance.
- Every effort is made to chart educationally defensible routes through the curriculum for all pupils without resort to special arrangements for minorities unless these are shown to be significantly disadvantaged.
- Alternative and rival forms of school organisation may exist but are treated as peripheral to the mainstream.

An Appropriate Curriculum

The most telling message to emerge from the country reports is that education systems have yet to succeed in devising a suitable curriculum for the whole 11-16 age group. This is not for want of trying. All the schools and school systems reviewed are continually modifying their curricula in response to external political and social pressures, the innovatory zeal of principals, individual teachers and groups of teachers and, not infrequently, the wishes of older students themselves. Nevertheless, it is becoming increasingly difficult to maintain a curriculum that simultaneously satisfies all demands.

The area covered by the curriculum has expanded considerably over the last twenty years or so. The time table usually allows for discussion of sexual matters, racial tensions, war and peace, drug problems and trends in popular culture and the mass media. In parallel, there has been a movement towards pupil-centred or individualized learning and a shift in emphasis from specifically academic goals to the all-round intellectual and social development of each individual. As a result, many schools have assumed far broader responsibilities for the learning experiences of their pupils. They have strengthened their socialization function and greatly expanded extra-curricular activities. Increasingly, more time is allocated to preparing pupils for working life.

On analysing the content of time tables in the four countries, it can be seen that the following topics consistently appear: communications and language skills; numeracy and mathematics; science and technology; social and environmental understanding; moral development; vocational studies; physical and mental recreational activities; creative arts; interpersonal skills. There is also a consistent stress on learning how to learn, the manipulation of ideas, discovery-learning and problem-solving. The difficulty

for teachers and principals is how to integrate these subjects into a flexible, creative and challenging learning experience for all pupils.

However, this interpretation of the scope and functions of the curriculum has provoked alarm in some political and educational circles and a demand for a 'return to basics' and more transparent 'school accountability'. Critics of the wider curriculum claim that the move from 'didactic teaching' to 'socialization' and adoption of so-called permissive teaching methods inspired by pupil-centred pedagogical theory have undermined in practice the pupils' ability to master the basic cognitive skills, especially numeracy and literacy. Standards are said to have fallen³, and schools are charged with failing to equip adolescents with the skills required of anyone living and learning in a modern technological society. This concern about allegedly declining standards in basic education is strong not only with regard to disadvantaged communities but also in some communities where schools appear to be relatively well financed, where the pupil-teacher ratio is relatively low, and where the teachers appear to be highly qualified.

Those responsible for the education systems reviewed by the OECD reject most of the criticisms levelled against the schools. They do all agree, however, that it is a hard task to strike and maintain a good balance between a generally acceptable core curriculum and elective subjects. They also attach the highest priority to ensuring that all pupils acquire the basic skills of learning. Not surprisingly, therefore, some of the more notable innovations pioneered by schools and teachers are designed mainly with low achievers in mind.

Pedagogy and School Organisation

In the four reports, there is in general, however, a remarkable paucity of evidence on significant developments and innovations in pedagogy and school organisation. From this it must be concluded that schooling processes have yet to implant a new pedagogy comparable to the structural and curricular reforms that have taken place. The one broad area of the school curriculum where promising developments are occurring covers careers advice, counselling, certain aspects of personal and social education, with the focus being on pupils' home backgrounds, personal problems and hopes for the future. These tend, however, to be at the margins of concern and, being costly in terms of staff, are expendable in times of budgetary austerity.

As to internal organisation, the prevailing practice — with the exception of Denmark — is differentiation not on an individual basis but according to group

characteristics. The typical learning unit remains the class, with a sole teacher in charge and the classroom as the physical and pedagogical base of operations. Through their own schooling and training, conditions of service and access to resources, most teachers have become conditioned to an instructional mode underpinned by public expectations that the school will control and direct children's learning in traditional ways. An inevitable result is an emphasis on competitive learning that is reinforced by grading and testing using norm referencing.

All this does not mean that the earlier aspirations of the proponents of comprehensive schooling to develop a truly innovative pedagogy as well as organisation are no longer regarded by policy makers, administrators and educationists as a high priority. The trouble is that the ordered and predictable school makes life easier for teachers and principals and is usually unquestioned by the students. What is required is a spirit of innovation and the democratic participation in change of all the actors concerned, including parents.

New Roles for Teachers

In current debates in OECD countries about the issue of quality and standards, one constant refrain is that effective learning depends first and foremost upon effective teaching. In practice, however, countries have been giving less attention to the condition of teachers and teaching in comprehensive schools than to structural, organisational and administrative matters. It is not for lack of reports, studies and recommendations on teachers, though, surprisingly, these have seldom been directed specifically at comprehensive rather than selective schools.

It is difficult to see how the full realization of the earlier vision of the comprehensive reform movement in Europe or progress in implementing the more recent American reports on effective schooling will be brought about if the teachers' tasks and conditions of service do not receive detailed reappraisal and reconstruction. The critical question is what kind of teaching force is required to implement reform and improvements in the middle years of schooling, and what does that imply for the selection, initial training, in-service training and career paths of teachers.

Some of the recent United States reports on the high school recognise the need for new teacher policies and interesting and controversial measures have been introduced in some states to bring about significant variations in teachers' roles, with substantial salary differentials for high performance or expertise in subjects where there is a teacher shortage. In Denmark, where teachers are esteemed and relatively

well paid, there is a high level of satisfaction both among teachers and their clients.

At the same time, while status and salaries are important matters, they are not sufficient. The centre of attention has to move to the teacher in the school setting, for it is neither to the profession in general nor to the single teacher but to the teaching team in the school that new measures must be addressed. This implies greater autonomy for teachers in relation to higher authority and greater respect for their professionalism.

In some countries, salvation is being sought through increased reliance on school principals in the belief that what teachers and pupils require is a new style of leadership. In the United States, principals are now not only expected to be first-class managers but also to exercise all-round and positive educational leadership. In Scotland, there is a growing conviction that pedagogical and curricular reforms cannot be successfully carried through unless all the actors, including parents, participate in determining goals and managing change by means of what are termed 'whole school policies'.

The Low Achievement Problem

In the last analysis, comprehensive schools must be judged by their capacity to serve the learning needs of all pupils from the lowest to the highest achievers. The impression left by the country reports is that, although deep dissatisfaction or disaffection are not apparent, there is evidence of indifference and apathy among some pupils and of considerable difficulty for education authorities in providing forms of schooling that engage and benefit a significant minority. In the United States, administrators, principals and teachers are worried about the high incidence of dropping-out, truancy or uneven attendance, low motivation and poor academic results in certain school districts. For all its preoccupation with youth culture, its rich resources and facilities, its readiness to experiment with practical alternative programmes and its development of home visiting and community "outreach", even the well-provided American school concedes that it has not succeeded in engaging all young adolescents in its educational endeavour. In Western Europe, it is still common for a substantial minority of students to leave school at 15 or 16, ill equipped for or unable to find work and showing a limited range of social and personal competence.

The mere institution of a new type of school organisation, the broadening and diversifying of the curriculum and the intro-

3. Quality in Education: more than a new watchword, *the OECD Observer*, N° 132, January 1985.

duction of novel ways of grouping pupils are not enough. To motivate pupils to learn who in their out-of-school lives receive little or no educational stimulus or reinforcement and are subject to pressures that actively work against the values and practices of school, calls for more imaginative and adventurous innovations than many curricula at present offer. It is, of course, expecting a great deal of public education systems to guarantee rewarding educational experiences for the whole adolescent age group. Yet, that is the purpose for which comprehensive schools were created. Either the ambition must be scaled down or a renewed commitment must be made to achieving it. One essential prerequisite in the next stage in the evolution of the comprehensive school will certainly be to give the closest possible attention to each individual learner in the schools. It is encouraging that in some current reform projects this has become the governing principle. It will also prove necessary to abandon some cherished assumptions and institutional practices.

The French idea of 'la vie scolaire', that is, recognising that each school should have a distinctive life of its own, is one attempt to dismantle institutionalized barriers, as is the use of team teaching and flexible time-tabling in some Danish schools and the whole-school approach adopted in Scotland. Systematic identification of pupils in difficulties and the provision of specially trained teachers and special facilities to help them overcome their problems represent other attempts to pursue a policy of individualised instruction.

* * *

Although the principle of 'comprehensiveness' of school organisation is not seriously in question, the forms of schooling so far devised to apply it still fall a long way short of what is required by pupils and society. Comprehensive schools are under great pressure, therefore, to mount and sustain programmes of improvement.

The comprehensive lower secondary school needs to be dynamic, sensitive and ready to adapt to changes in the wider society, and open to regular evaluation. It needs to be more pupil-centred and more innovative in pedagogical practice while preparing youngsters for their future education and training, work and leisure. It is a means and not an end and must be kept under constant review if it is to serve effectively the purposes for which it has been conceived. It should not be seen as a sacrosanct model but rather as a broadly defined institution through which the educational needs of younger adolescents can be served in a responsible and above all flexible manner.

Spain: A Challenging Role for Education

Spain's entry into the Common Market tends to be viewed almost exclusively in terms of its likely consequences for the Spanish economy. The question is will entry lead, as confidently expected, to a rise in national prosperity or will the winds of competition bring only cold comfort? Other questions are overshadowed by that overriding concern, but they still need to be asked. One such query is what will or should be the consequences for the system of education and training? This question is explored by the author of the preceeding article.

The Minister for Education and Science, José María Maravall, is in no doubt that education must play a central role in promoting the economic as well as social and cultural development of the nation¹. Going into Europe challenges the system to raise standards of achievement in schools and universities up to the highest levels to be found in other countries.

At this crucial moment, OECD has just completed a report on education in Spain, the latest of its periodic examinations of national educational policies. The impressions and suggestions of the examiners are mainly designed for consideration by the Spanish authorities, but they also serve the purpose of apprising other OECD countries of the aspirations and problems of an educational system that, because of the Pyrenees barrier, has hitherto been unknown territory².

Spectacular Expansion

The examiners were struck by the spectacular expansion of educational provision that has occurred since about 1960. Before that time, many children did not even go to school, and secondary schools and universities were an elitist preserve. Since the fading years of the Franquiste regime, and particularly since the return of democratic institutions, quantitative progress has been meteoric under two impulses: the demands of an expanding economy and public conversion to the ideal of equality of opportunity.

Today the statistics speak for themselves: 85 per cent of five-year olds are in a pre-school centre; attendance through the compulsory cycle is virtually 100 per cent;

the secondary education retention rate is high by international standards and rising; the universities are bursting at the seams, although many new ones have been created. In 1984-5 school enrolments reached 5.6 million, and no fewer than 222,000 new places were provided. In the same year, university enrolments at 750,000 were more than double the total for 1970. The demand for education is thus being satisfied except for a shortage in some areas of pre-school places for the under-fives and a lack of suitable education and training programmes for all the early school leavers who seek them.

The expansion has necessitated mounting and sustaining an intensive building construction programme, appointing tens of thousands of teachers at all levels and improvising administrative infrastructures. Quantitative success has been bought, not surprisingly, at a cost. The quality of provision is freely admitted to be uneven as regards teacher performance, building space and design, and the availability of essential equipment and learning aids. The gap between the best- and worst-provided establishments is wide. The authorities are striving, there-

1. José María Maravall, *La Reforma de la Enseñanza*, Laia Publishing House, Barcelona, 1984

2. The examiners of the Spanish Educational System were: Professor J.R. Frausto da Silva, Director, The National Institute of Administration; former Minister of Education, Portugal; Dr. M. Milutinovic, Director, the National Library, former, Minister of Education, Serbia, Yugoslavia; Professor P. Vanbergen, Former Secretary General, Ministry of National Education, French-speaking sector, Belgium.



fore, to raise standards everywhere to acceptable norms while simultaneously democratizing the entire system.

Ambitions and Financial Constraints

Spain is committed to an ambitious reform of its educational system across the board :

- Increasing the number of pre-school places
- Reforming lower secondary education
- Reforming the first two years of upper secondary education and keeping all young people in school until the age of sixteen
- Reforming higher education.

These changes will lead, assuredly, to an increase, first, in 14-16 age group enrolments and, soon afterwards, in 17-18 age group enrolments. At the same time, it has been decided to strengthen rural schools and tackle the problem of adult illiteracy. All these decisions entail not only massive training and re-training programmes for teachers but heavy expenditure on learning aids and equipment and substantial capital

investment as well. The question which immediately arises is how these priorities can be pursued simultaneously and where the necessary funds are to come from.

The difficulty would appear to be compounded by the constraint upon educational expenditure occasioned by the low rate of national taxation and consequently restricted national budget. Public expenditure on education as a percentage of GDP at 3.5 per cent for 1984 (Ministry of Education 2.7 per cent and local authorities 0.8 per cent) was among the lowest within the OECD group of countries. Yet this outlay was almost 12 per cent of public expenditure. Arguably, of course, this low base gives Spain the potential for considerable expansion, provided that there be a powerful and continuing rise in economic output. It is certainly remarkable that, despite apparently cramped resources, Spain should have succeeded in erecting so many new educational buildings and recruiting so many new school and university teachers over the past ten years. Moreover, the national education authorities do not believe that their reform plans are likely to falter for lack of appropriate

financing, and this partially explains their boldness in pursuing several grand priorities in parallel. Nor do they face a situation, as do education ministries in many other countries, in which the finance and other ministries are determined to keep educational expenditure within strict bounds.

Still, it must be asked how the authorities can obtain sufficient resources to fund the broad array of reforms to which they are committed. The cost of extending the school-leaving age to sixteen will in itself be great. The response of the authorities is that implementation of the major reforms will be graduated so as to permit incremental increases in expenditure. OECD's examiners for their part consider that it would be helpful to develop more systematic forecasting of resource needs over the mid- and long-term.

Regional and Linguistic Autonomy

Spain is segmented into distinct geographical regions or provinces that have never lost their own characteristic cultures or, in some instances, their own languages: Catalan is spoken not only in Catalonia but also in the Balearics and Valencia, Euskera in the Basque region and Gallego in Galicia and parts of adjacent regions. Under the Franquiste regime, the highly centralized, financially starved and immobile education system commanded neither the willing co-operation nor esteem of the regions. The aspiration today, however, is to harmonize distinctive regional values and loyalties with a nationwide culture that is itself highly distinctive, Spain more than most other countries having so far resisted the standardizing effects of mass consumption, mass communications, advanced technology and travel.

To that end, extensive powers are being devolved from the Ministry of Education in Madrid to the regions. Symbolically, the word 'regions' is now invariably qualified by the adjective 'autonomous'. The process of decentralization affects the whole social sector and to some degree the economic sector as well. However, it is commonly recognised that no sector of decision making and control will be more affected than education, which will be very largely directed by the respective regional governments within four to five years' time. Six regions — Andalusia, Basque, Catalonia, Galicia, Valencia and the Canary Islands — already enjoy more or less full educational independence.

Devolution of powers from Madrid to regional capitals will not ensure democratisation, unless local communities and schools are also enabled to assume significant responsibilities. The vital question is whether practice in the schools themselves will be liberated from the excessive rules

and regulations, so many and so complicated as often to be ineffectual, that in the past stultified the enthusiasm of even the most enthusiastic teachers. So far the evidence is encouraging, even though problems confront the autonomous regions on a daunting scale.

To begin with, Catalonia, the Basque region and Galicia now require instruction to be carried out in the traditional language. This places a heavy burden on the timetable and calls for the production of numerous new texts. It also raises the problem of where to find space in the curriculum for the teaching of foreign languages, which assumes greater importance now that Spain has joined the EC. Many Spanish children are expected to master in effect three languages: the historic regional language, Castilian and English or French.

Then, each autonomous region must construct what amounts to a ministry of education, not to speak of viable education departments in towns and rural areas. That is no easy task. The centralized bureaucracy was criticized for its top-heavy structure and authoritarian style but nevertheless comprised a wealth of experience and professional expertise. Some officials are moving from the centre to posts in the new regional ministries. There is still a shortage, however, of administrators and advisers competent to hold down senior positions. The courses for educational administrators already arranged by the Ministry of Education and Science will need to be multiplied, therefore, and offered throughout the country.

The vivid impression left with the examiners was of a collective will among senior officials in the autonomous regions to bring about educational improvement at great speed. Decentralization appears to be having a tonic effect. The acid test is going to be how to sustain the initial mood of enthusiasm and zest for experiment and how to ensure that administrators and teachers at all levels are sufficiently motivated to try new approaches and methods.

Rural Schools and Private Schools

Two features of Spain's policies for schools are of particular interest. The first is the determination to retain even small rural schools at all costs. The second is the existence of the largest private or independent school sector among OECD countries.

Until scarcely four years ago the policy was to close small rural schools and rely heavily on an extensive and expensive transport service to convey the pupils to a consolidated school located at a strategic centre, the assumption being that this offered the best means of providing ade-

quate accommodation and instructional resources. As a result, numerous schools disappeared. The new policy is to maintain schools even in tiny, remote villages for three powerful reasons. The first is to protect children's educational and affective development. 'Bussing' is now seen to be bad for them, and boarding is dismissed as a last-resort option. The second is the government's adoption of a new policy to encourage villagers to stay where they are, both to avoid further rural depopulation and decay and to stop the flow of migrants into the towns and cities where high unemployment already prevails. It is, of course, well attested in many countries that parents leave their villages when there is no longer a school nearby. The third is that an increasing number of parents object to sending their children to a distant place and insist upon having a local school.

The new rural development strategy means that a considerable number of schools will continue to be staffed by a single teacher. A device to overcome that problem, being tried out in a large number of areas, is to link together groups of villages in a network and to staff them with itinerant teachers operating as a team. The strategy necessitates the active co-operation and financial contribution of parents, even if only in the form of unpaid labour. In a typical case, six village centres are co-ordinated in a single network, 120 pupils being taught by nine teachers. The teachers, most of them very young and carefully selected, move from one school to another according to the subjects to be taught. There is a central learning resource centre from which teaching aids can be made available to each school as the timetable requires. The curriculum is partitioned in fifteen-day blocks of time. There is stress on individualizing learning. Projects are selected to reflect the history, characteristics and problems of the local environment; nature studies figure prominently. Sports, theatre and music facilities are shared.

A large percentage of education in Spain is *private*; some 50 percent of pre-school centres, 30 per cent of primary schools and 50 per cent of secondary schools – in total, 40 per cent of primary and lower secondary enrolments combined. Most of the private schools are located in the towns and cities: in Barcelona, for example, they serve no fewer than 50 per cent of the pupils.

Since 1972, the government has heavily subsidized private schools. As in Denmark, up to 85 per cent of each school's recurrent expenditure, assessed according to the number of pupil enrolments, is financed by the State. The assumption underlying this generous rate is that fees must be kept down to a reasonably low level so that no parents will be deterred from sending their

children to a private school because of prohibitive costs. It is also fully recognised that, apart from the principle of freedom of choice for parents, there is for the foreseeable future no way in which the State could satisfy the huge demand for places at all levels. At the same time, the State is intent upon raising the quality and increasing the number of places in the public system, with the long-term expectation that the demand for privately provided education will diminish and eventually wither away.

The functions and status of private schools in Spain cannot crudely be compared with those obtaining in countries where private education exists for an elite or for predominantly religious purposes. Many of them, in Barcelona, for example, were set up in opposition to the ill-regarded public schools under the Franquiste regime. Some are very poor. A few are elite establishments. All would claim to be performing a vital social service and all would affirm that in a democratic state parents should have the right to choose schools for their children that reflect their own values or religious beliefs. A law on the Right to Education (LODE) prescribes regulations according to which private schools shall operate. They must, for example, offer open access and maintain minimum standards of instruction and buildings and equipment.

Educational Assets

In pursuing its ambitious educational goals, Spain enjoys four sterling assets. The first is the strong sense of family that ensures good care of the young and support for children's efforts in school. During their visits to schools the examiners found that excellent canteen facilities were not being used because all the families assembled for lunch at home. The second is the high value attached to education. Despite the often acute shortage of accommodation and teaching materials, despite the dislocations and lags caused by hectic expansion, despite the meagre job opportunities for school-leavers, parents largely approve of what the schools are doing for their children. The third is the pragmatism of the key actors – policy-makers, administrators and teachers. No one expects miracles. Everyone cheerfully recognises the many deficiencies. But pragmatism goes with a deep conviction that rapid improvement can and shall be sustained. The fourth asset is the youthfulness of those who guide, manage and serve the system. Education in Spain is in the hands of the younger generation. In the long run this will lead to inertia if new comers cannot be brought in to play their part. In the immediate term, however, education in Spain is being carried along on a wave of youthful energy and enthusiasm. ■

Strengthening Noise Abatement Policies

OECD countries have not taken adequate steps to counter the noise impact of the increase in road and air traffic over the past 20 years, thereby leaving many millions of people exposed to an uncomfortably noisy environment. Yet significant improvements could easily be made by lowering peak noise limits, by enforcing regulations more effectively and by introducing incentive measures that reward those who contribute to reducing noise levels and penalize those who do not. These are the main conclusions of a report by an OECD ad hoc Group on Noise Abatement Policies.¹

Noise is the main source of nuisance in the home for most people. It is mentioned far more frequently than any other neighbourhood problem in opinion surveys and is the subject of most environmental complaints in several countries. Yet governments in OECD countries have been content merely to prevent peak noise levels (the so-called "black spots") from rising, while background noise is getting louder and more widespread. This has eroded the "stock of silence", increased general annoyance and created wide-ranging "grey areas" which, although not intensely noisy, are places of virtually continuous activity, exposed to "average" noise levels that are already, by definition, annoying.

Excessive noise has a multi-faceted impact on people — their health, their conversation and communication (especially at home and in schools), their psychological disposition and their sleep. It not only disrupts daily activities, therefore, but also creates a stressful environment.

Motor traffic is the main source of noise in terms of the number of people affected, with neighbourhood noise in second place and aircraft noise third. The rapid urbanization of the past 20 years has resulted in more people being exposed to higher noise levels. During that period, the number of motor vehicles has trebled, and air traffic has increased tenfold. The fact that there has been no improvement over the past ten years in terms of the number of people exposed to annoying noise levels bodes ill for the future since the number of motor vehicles and aircraft in use will continue to grow. There is clear evidence that the situation has deteriorated in countries where noise abatement policies have only

followed past trends instead of becoming increasingly severe (especially in the case of road traffic). In many cases, moreover, existing regulations and measures are not sufficient to bring about any reduction in current noise levels, with the result that "grey areas" will grow, and further progress towards the elimination of remaining "black spots" will be limited unless more forceful action is taken.

Overall, it has been estimated that some 16 per cent of the inhabitants of OECD countries — numbering 130 million people — were exposed in 1985 to noise levels in excess of 65 decibels (which constitutes the limit of acceptability since, at that level, noise becomes physically and psychologically damaging); of these, 110 million people are exposed to unacceptable road traffic noise.

Road Traffic

Noise-at-source regulations in many OECD Member countries, laid down in the early 1980s, impose limits of 80 decibels for private cars and 88 decibels for heavy lorries, but application of these provisions would not improve the noise exposure of urban dwellers; at best, there would be a long-term stabilization of noise levels in the most affected areas. The introduction of lower limits (77 decibels for cars, 84 decibels for lorries) in the European Community from 1988 onwards should ensure some improvement, but even that is inadequate, OECD's report notes.

What is required first and foremost is a more drastic reduction in noise emission limits — to 75 decibels for cars and 80 decibels for lorries — as recommended by an OECD Conference on Noise in 1980. That

would have a marked effect; in Switzerland, for instance, the number of people exposed to noise levels of over 65 decibels could be reduced by a third, while reductions of 50 per cent in France, 55 per cent in Norway and 60 per cent in Denmark could be obtained.

Regulations governing the noise emission of road traffic were not tightened much in OECD countries during the 1970s, except in Japan and Switzerland. On the other hand, attention began to be given to protecting those people most exposed to noise by insulating outside walls of buildings and/or erecting sound barriers in the form of screens or embankments along noisy roads running close to residential areas.

In general, though, the main emphasis of noise abatement policies should remain on controlling noise at source, and there should be some reduction in noise limits in many OECD countries in the second half of the 1980s.

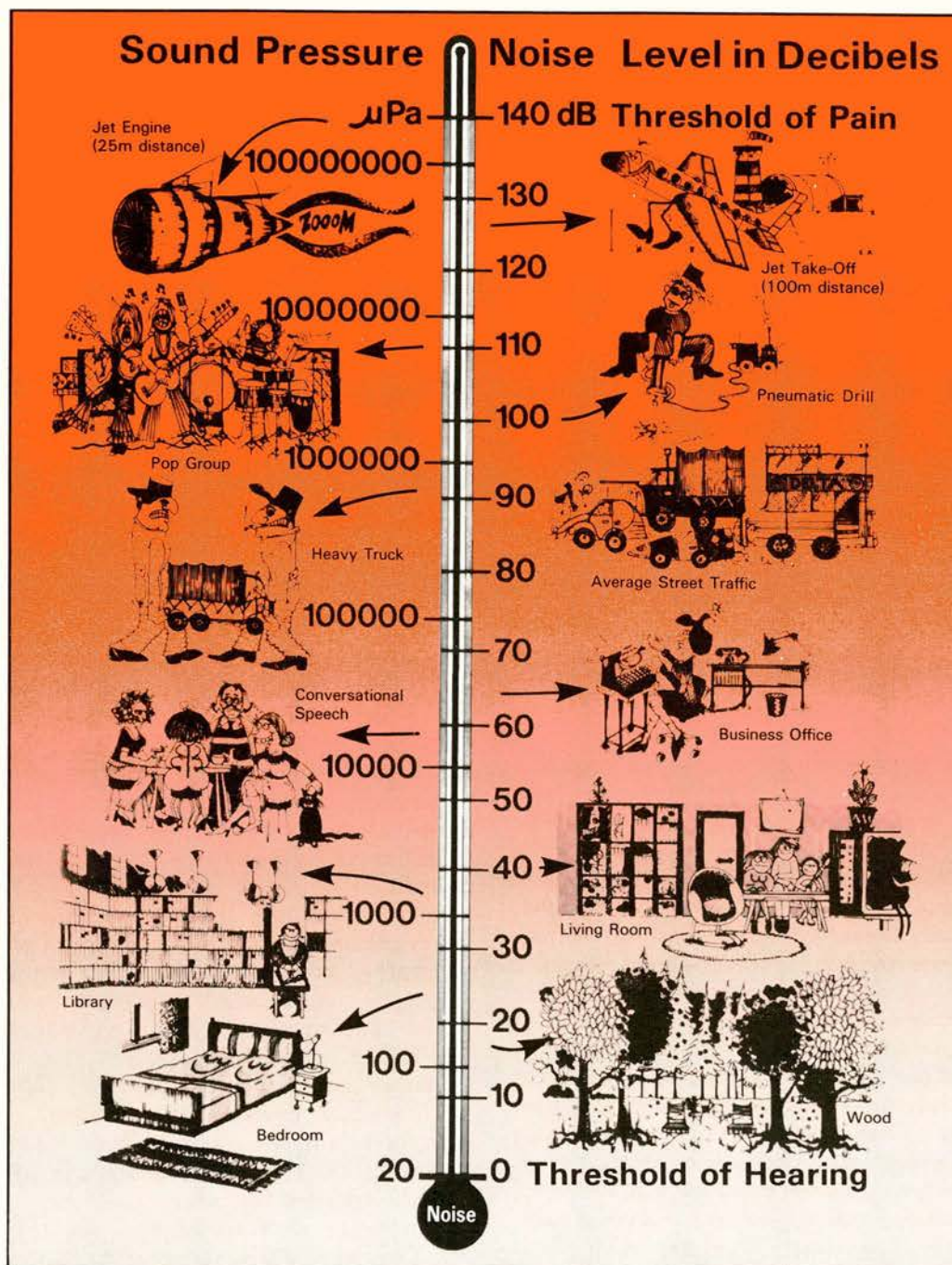
Japan has already adopted stringent noise emission limits, while Switzerland is bringing in a new limit of 75 decibels for private cars in 1986, corresponding to the OECD recommendation.

The problem of road traffic noise in recent years has been aggravated by the proliferation of diesel engines for reasons of fuel economy. Furthermore, automobile manufacturers are planning to bring out direct-injection diesel vehicles over the next few years which, while affording even greater fuel savings, will have noise levels of two to three decibels higher than conventional engines. On the other hand, the growth in automatically driven vehicles and the improvement in aerodynamic design of vehicles are a positive development, since these measures reduce noise.

On the whole, less severe restrictions (84 to 86 decibels) apply for two-wheeled vehicles than for private cars whereas these two-wheeled vehicles constitute in many cases the main source of noise annoyance. However, countries like Japan and Switzerland have adopted the same limit for motorcycles as for private cars.

It should be noted that some vehicles (at

1. Strengthening Noise Abatement Policies, to be published shortly.



least 20 per cent of private cars on sale) do comply with the lower limits recommended without incorporating any complex technology. But for other types of vehicles (heavy trucks in particular), the problem may be more technologically difficult and costly. Technological progress in the motor industry is rapid, however, and manufacturers could comply with even stiffer limits than those now in prospect if noise were an important parameter at the design stage of new vehicles.

In addition to engine noise, "rolling" noise will also need to be included in the regulations in future because of the great number of freeways (and, therefore, of the rolling noise of vehicles) in many countries. Also provisions will have to be made for periodic checks of vehicles during their useful life and for control of noisy vehicles on the spot as is already done in several countries (Australia, France, the Netherlands).

Air Traffic Noise

Aircraft noise began to be taken into consideration along with road traffic noise in the 1970s. New regulations introduced in the United States in 1969 and in Europe in 1972 stipulated that every new type of subsonic jet aircraft should have a noise level certificate. These measures had the effect of reducing aircraft noise by five to seven decibels. Stricter noise standards were laid down for jet aircraft designed after 1977, which brought down noise levels by five to seven decibels more. The result of these measures was that, whereas first generation jets emitted 70 decibels over 75 sq. km. second-generation jets had a "noise footprint" of 25 sq. km. and third-generation jets of only 10 sq. km. There are still relatively few of these latest types of aircraft in service; in 1983, for instance, they accounted for 20 per cent of all subsonic commercial aircraft whereas

50 per cent of the world fleet consisted of second-generation jets while 30 per cent were uncertified planes.

As well as imposing limits on aircraft-noise emission, a second line of approach has been to introduce noise-related charges in countries like Japan, Switzerland, the Netherlands and France. Germany and the United Kingdom adopted the reverse policy of reducing landing fees for certified aircraft. These charges and reductions represent a small proportion of airline operating costs, and, therefore, constitute little incentive to reduce noise, but they are an important source of revenue with which to finance the sound insulation of the most exposed dwellings.

As for the future, the prospects are better than in the case of motor vehicles, since new, less noisy aircraft are being introduced progressively, and the remaining non-certified commercial aircraft will be phased out between 1985 and 1990. A reduction in aircraft noise largely depends on the replacement rate of existing fleets. But while everyone agrees on the basic objective of achieving a world fleet of third-generation jet planes complying with the strictest standards, there is some disagreement on the ways and means of reaching that objective.

Three regulatory approaches are possible:

1. Phased replacement of the noisiest and then the less noisy aircraft or, alternatively, replacement by natural turnover. This method is the least likely to be adopted since it would take too long (given that the life cycle of an aircraft type is 20 to 25 years).

2. Prohibiting uncertified aircraft as quickly as possible, since these are the planes causing the principal nuisance to people living near airports. A deadline of end 1984 was set by the United States, while the European Civil Aviation Conference recommended that its members opt for a date between 1984 and 1987. Such regulations can pose a problem for airlines in the event that they have to withdraw uncertified aircraft before the new models most suited to their needs are available (the new generation of 130-160-seat aircraft will not come out until around 1986, for instance). Airlines are then faced with a choice of refitting old aircraft to make them comply with new noise standards pending the arrival of third-generation planes, or of buying second generation aircraft which are noisier than the new models now emerging.

3. Banning the production and registration of aircraft not meeting the strictest standards now in force. Aircraft manufacturers and operators are opposed to this approach on economic grounds. However, since there will be no substantial reduction in noise levels around airports until all

uncertified and second generation planes are replaced, a deadline would need to be set for withdrawing them from service.

Whichever approach is adopted, existing forecasts already point to a considerable reduction in the nuisance caused by aircraft noise in the coming years. In the United States and Australia, a 50-70 per cent reduction in the number of people exposed to commercial aircraft noise is forecast; in France, the area exposed to aircraft noise around its five main airports is expected to be reduced by 75 per cent; in Denmark, the number of people exposed to aircraft noise levels of over 65 decibels should fall by 35 per cent.

Other Sources of Noise

While neighbourhood noise is the second biggest nuisance, it is hard to identify and analyse, unlike other more tangible sources, such as trains, factories, construction and industrial equipment or even leisure activities. Very little information is available about these sources of noise on the whole, and little is done to limit or control them. Trains are covered by general noise emission legislation in the Netherlands and the United States, though, and the European Community took a step towards placing limits on train noise with the publication in December 1983 of a draft directive, although it would only apply to new rolling stock.

These less serious sources of disturbing noise have been somewhat neglected until now in many countries. All in all, noise abatement policies progress slowly and, in some areas, the lack of a sufficient stimulus has retarded the development of noise-reduction technology. Policies have generally been partial and inadequate: *partial*, because most countries have adopted only sectoral measures that are seldom properly coordinated or fully comprehensive; *inadequate*, because they are often the product of compromise and only have an effect in the very long term.

Meanwhile, new sources of noise are emerging with changes in life-styles and technology, in the shape of the growing numbers of diesel-engined vehicles and, in particular, of very heavy goods vehicles; the emergence of ultra-light aircraft with their noisy little engines; the booming world helicopter fleet which is expected to double before the end of the century while noise regulations are too lax, low-noise models are virtually non-existent; and the proliferation of recreational vehicles and products that add new sorts of noise in different places and at different times — ranging from trailbikes, snowmobiles and dune buggies to portable stereo sets.

This multiplicity of new noise sources highlights the problem of accumulative exposure to a whole range of different

noises, which deserves a rapid and full response. Present noise abatement policies are based on an assessment of only part of the noise environment. A substantial part of aggregate noise is not covered, an approach which is not conducive to concerted, effective action to reduce the total noise to which people are exposed.

Incentive and Penalties

Apart from noise emission regulations, there is a whole range of other devices for encouraging companies, organisations and users to bring noise levels down to an economic and technical minimum. Financial incentives can be used either to penalize the manufacturers and operators of noisy equipment or to reward the development and utilization of low-noise machines. One example of this is the noise charge system practised at many airports, and a similar approach could be applied to road traffic.

In general, incentives and deterrents would do more to enable low-noise vehicles and machines to enter the market than do regulations, which simply lay down maximum limits and do not really encourage manufacturers to do any better. They should be designed in such a way as to guide consumer choice towards low-noise products.

While aircraft noise charges are already in use in six countries, the Netherlands is the only country at present to have introduced a system of road traffic charges which are a surtax on fuel. The rates have been adjusted on several occasions since the system was brought in at the end of 1980, and the revenues have risen considerably each year since then, the funds being used to finance a variety of noise abatement initiatives, including research and development into low-noise technology.

The Netherlands is also the only country to have imposed a charge on the external noise emitted from industrial plants. A list of 1,300 noisy industrial plants has been drawn up, and they have to apply for a licence to carry on their activities. A charge is made for the licence on the basis of a noise factor, taking account of both the intensity and duration of the noise, and the proceeds are again used to finance work on reducing industrial noise.

Another form of economic instrument used to reduce noise levels is direct financial assistance given to organisations conducting research and development into low-noise equipment. Similarly, funds can be made available to companies for the purchase of such equipment. At another level, government procurement policies can be directed towards the acquisition of low-noise machines, especially for public transport networks. Yet another device for promoting the purchase of low-noise pro-

ducts is to require all appliances to carry labels specifying their noise levels, so that consumers are encouraged to buy the quietest ones.

In addition to financial incentives and deterrents, the use of low-noise machines can be encouraged through other types of action, such as awareness and information campaigns. Some governments have mounted anti-noise campaigns at national or local level; others have tried "quiet town" experiments. Many provide information services or publish brochures warning of the dangers and irritation of excessive noise and encouraging a reduction in noise levels in all spheres of life. Action has also been directed at particular groups, such as children, decision-makers and employers, elected representatives and officials. Town planning is beginning to take noise into consideration, and road systems are being designed to minimize the noise impact on the local population. A variety of noise abatement organisations has also been created, ranging from national noise councils to local noise officers and anti-noise brigades.

These different types of economic instruments and incentive measures are — and will increasingly become — an indispensable complement to often poorly enforced and very slowly evolving regulations.

At present, spending on noise abatement remains very small in most OECD countries, especially in relation to the degree of nuisance caused by excessive noise levels. Data concerning measures for reducing road traffic noise suggest that in the early 1980s, OECD government outlays amounted to only about \$2 per head, or 0.02 to 0.03 per cent of GDP.

If OECD countries applied the noise emission limits for motor vehicles recommended by OECD, annual expenditure of \$10 to \$15 per head would be required, or an average of 0.13 per cent of GDP — though since a large number of vehicles already meet these norms, the actual cost would probably only average a half or a third of that, say 0.05 per cent of GDP.

* * *

Nearly all of the elements necessary for a determined noise abatement policy — in terms both of technology and the range of policy instruments — are now available, and government action now needs to be stepped up and made more effective. Regulations should be tightened, but they also have to be vigorously enforced. And they need to be backed up by a mixture of incentives, penalties and publicity/information campaigns to be self-financed by an appropriate use of economic instruments. Only then will OECD countries enjoy a satisfactory noise environment, which is such an important factor in the overall quality of life. ■

Country Problems and Strategies

Denmark



Denmark is noted for the design of its products, whether high-tech or traditional.

The new economic strategy introduced in 1982 has induced a strong recovery in Denmark's performance over the past three years. Real GDP growth has averaged nearly 3 per cent per year, inflation had been reduced to an annual rate of under 4 per cent by the end of 1985, and the unemployment rate has been brought down to single digit figures. The only really black spot is Denmark's external position, which has deteriorated steadily and resulted in a record current account deficit equivalent to 4.6 per cent of GDP in 1985.

The new policy approach was designed as an end to stop-go policies and was based on the three Cs – consistency, continuity and credibility. It consists of an incomes policy (for both the public and private sectors), a tight fiscal policy, a flexible monetary policy, a stable exchange rate and a set of structural policies aimed at

reducing rigidities in the labour market and promoting technological progress in private industry. The strategy is set in a medium-term framework, its underlying objective being to achieve a combination of external and internal balance by the end of the decade, with internal balance defined as a situation in which the government budget is balanced and the level of unemployment is considerably reduced.

The Danish recovery compares very favourably with developments elsewhere in Europe. The growth of output, employment and investment has been stronger than in other European countries, while inflation and the budget deficit have been brought down more rapidly. In general terms, the recovery has been driven by investment and exports rather than consumption, but the poor balance of payments performance reflects the inherent structural weaknesses of the Danish economy, which is to say the

relatively small size of the tradeable goods sector and the low level of national savings. In comparison with past recoveries, the fall in inflation this time contrasts with a tendency for the rate of price increases to have risen during the upswing. On the other hand, the rate of unemployment, though down from 10½ per cent in 1983 to 9 per cent in 1985, remains well above the levels of the 1970s, and the cumulative external deficit as a proportion of GDP, over the 1982-1985 period, clearly exceeds that of the recoveries in the 1960s and the early 1970s. Nevertheless, the growth process took on a self-sustaining character early in the recovery, as private consumption and residential construction picked up sharply in the wake of the strong growth in business investment.

The government's medium-term scenario, based on the continuation of existing policies, suggests that the current positive trends will continue. Sustained growth in industrial output is expected to reflect gains in market shares for Danish industry at home and abroad. As regards the current account deficit, the official deadline is for it to disappear in the course of 1988, but OECD projections are less sanguine. The more than doubling of the deficit between 1983 and 1985 reflected cyclical as well as structural factors, and both could coincide to prolong the deficit beyond 1988. These factors include the modest growth of the international economy, which limits potential for Danish exports, the high level of international interest rates, which the OECD does not expect to fall very rapidly, and the emergence of structural problems within the Danish economy, which might prevent its exports from expanding at the required speed.

To the extent that exports are viewed as the engine of growth in the government's scenario, any threats to export performance could jeopardize the entire strategy. Hopes for a rapid return to external balance were high in 1983 when significant gains were made in export markets, but these hopes were dashed in 1984 when export growth slumped and market share was lost. At the same time, imports increased more rapidly, attracted by the high level of business fixed investment. →

The Danish economy is still highly dependent on agriculture, and this is reflected in the composition of its exports; the agricultural content of total Danish export value is higher than in any other European country except Greece and Italy. The other side of that coin is that Denmark has not diversified very much into new high-growth, high-technology industries. While there has been some improvement since 1980, the long-term picture is one of weak export performance by Danish industry, and that could be attributable to the structure of its exports.

Since 1975, worldwide high-technology manufactured goods exports have risen considerably faster than other manufactured goods exports, increasing their total share of manufactured exports from around 13 per cent in the 1970s to over 17 per cent in 1983. While Danish exports of high-tech products have increased as a proportion of its non-food manufactured exports, their share of total exports may not have risen much. However, Danish exports have in the last 10 to 15 years improved in character in the sense that high-tech products play an increasing role in total exports though the high-tech deficit has declined only more recently.

All in all, Denmark appears to have a comparative advantage in so-called mature products which are exposed to fierce competition. However, with its relatively high wages, Denmark cannot be considered well placed to compete on price with low-cost producers. Denmark's export competitiveness has improved over the past six years, however, as a result of rising productivity, wage moderation and favourable exchange movements, so Danish manufacturing industry is in a better competitive position now than it was 10 years ago.

There are a number of reasons for Denmark's failure to develop technology-based, knowledge-intensive industries on a large scale. It was late to industrialize compared with other European countries, and its large agricultural sector has benefited from membership in the European Community. It has maintained the viability of its traditional industries like food processing, textiles, clothing and furniture, but never became heavily engaged in the "sunset industries" such as shipbuilding, steel, petrochemicals and motor manufacturing, which have suffered from overcapacity and fierce international competition since the 1970s. Denmark has not had the stimulus of major military or aerospace programmes, either, and its spending on R&D falls well short of countries like Sweden, Japan or Germany in relative terms (possibly due to the absence of big multinational corporations which tend to account for a large part of other countries' R&D outlays).

Industrial policy has now been redirected towards promoting the application of new technologies and away from defensive support measures. Subsidies and other support to industry have been cut by nearly 50 per cent since 1982, while an increasing share of the remaining funds has been allocated to "technology policy".

Another more basic limitation on export growth could simply be inadequate production capacity, since the number of firms reporting insufficient capacity has risen strongly during the recovery. Capacity utilisation in 1984 was as high as in 1973, although the capital stock was 10 per cent larger and employment 8 per cent lower. But the rapid increase in investment over the past few years suggests that capacity restrictions will not act as a constraint on production. Rather, it is a shortage of suitably qualified labour that is more likely to be a problem. There have already been signs of bottlenecks as regards the demand for certain categories of skilled labour despite the high overall level of unemployment. This suggests that the obsolescence of human capital may be more rapid than is

generally supposed, and that is borne out by the government's medium-term projections. It has, therefore, allocated substantial resources to improving the quality of education, training and retraining.

At the root of Denmark's external imbalance, though, is the "old-fashioned" structure of its exports and the small tradeable goods sector. If Denmark is to ensure its long-term competitiveness in export markets, it needs to develop new industries that are knowledge-based. The government's technology programme is important and well designed, providing as it does general incentives to firms to introduce new technology more rapidly. But technology adaptation cannot replace fundamental research as a basis for future progress and prosperity. At the same time, a greater effort must be made to adapt the labour force to changing conditions and requirements. Unless such problems are solved within a relatively short time horizon, the structural component of unemployment is likely to grow and thus threaten the government's medium-term objectives. ■



Philips voice synthesizer for use in verbal communication between humans and computers.

While the economic performance of the Netherlands has improved significantly over the past two to three years, it is still suffering from the lingering effects of policies and developments of the 1970s and early 1980s. Important among these were: a rapid rise in gas production and prices; an expansion of the public sector, particularly transfer payments, only partly paid for by higher gas revenues; and pressures on profits as higher wages raised costs while

an appreciating currency eroded competitiveness and constrained the prices of goods. In a word, the economy suffered from the "Dutch disease" and had become increasingly unresponsive to market forces. During the recession following the second oil crisis, investment fell sharply, there was an accelerated decline of manufacturing as a share of GDP, which had been falling over the previous ten years, unemployment shot up, and the government deficit widened at an alarming speed. →

These forces provoked a shift in policies in 1982-83. Public expenditure cuts helped reduce the size of the deficit and permitted some decline in the tax burden. This was accompanied by improved economic conditions. In the market sector, negotiations led to a sharp curtailment of wage growth, while inflation fell to under 2 per cent. Lower growth in labour costs, accompanied by higher demand as world trade strengthened, led to an increase in profits while improved competitiveness has been one of the factors underlying the strong balance of payments surplus. Domestic demand has begun to strengthen more recently and this, accompanied by higher exports, has been partly responsible for a decline in unemployment over the past year. Nonetheless, unemployment still remains one of the highest in the OECD area. In addition, the government deficit will have to be further reduced to curb the escalation in the size of the public debt and debt interest payments. This task will be made more difficult by the sharp reductions in gas revenues which can be expected in 1987.

The Role of Government

From the several different scenarios presented in the recent budget, it would appear essential that the deficit be reduced to a level at which interest payments stabilize as a share of net national income by 1990. This requires annual budgetary cuts from forward estimates averaging Gld. 2½ to 3 billion per year or 1 to 1¼ per cent of government expenditure, with sharper cuts than the average in 1987. Whether or not the Government should aim at a faster pace remains difficult to judge. More substantial cuts in expenditure might dampen private consumption and employment. On the other hand, a sharper reduction in expenditure might ease pressure on financial markets and lower interest rates more than they already have, which in turn could stimulate business investment. Lower expenditure could also permit additional reductions in taxes, which would favour increased responsiveness of the economy over the longer haul.

A fall in gas output was expected to depress GDP growth to around 1¼ per cent, but with non-gas output rising by about 1¾ per cent and falling energy prices, growth is likely to be stronger. Higher domestic demand, led by private consumption and a pick-up in investment, will be broadly offset by weaker exports. With decelerating export growth and no apparent room for government policies to support aggregate demand, further strengthening of the economy must rely on self-levitating growth of the private sector. Ideally, stronger growth should be led by private investment as this would ease

potential capacity constraints, accelerate the introduction of new technology and raise the long-term growth of productivity. But profits in many firms are still too low to permit new undertakings, and some further increase seems desirable. At the same time, government policies do have a role in improving the adaptiveness and flexibility of the economy.

The Recovery of Manufacturing

One of the most striking features of the Netherlands' economy has been the sharp decline in the share of manufacturing in total output over the past 15 years in parallel with an expanding gas and service sector (including government). While the contraction of manufacturing was most marked in declining sectors such as clothing, textiles and footwear, basic metals and shipbuilding, it was widespread. Between 1970 and 1982, the share of manufacturing in output, excluding gas and housing services, fell by 8 percentage points. With much of industrial adjustment now behind it, the environment for a potential resurgence of industry has improved. Profits have recovered, manufacturing is competitive internationally, industrial relations are good, wage demands remain restrained and inflation is low.

However, there are a number of potential weaknesses that could prevent the country from deriving maximum benefit from the changes now taking place in the pattern of international trade:

- The Netherlands is more dependent on chemicals and oil refining than most OECD countries, and these are industries likely to face increased competition from newly industrialized countries and some oil exporters. It also has a relatively large agricultural sector, the outlook for which is sluggish demand growth, while its manufactured exports are concentrated in low-technology goods.
- There is still some way to go before the corporate sector has the financial resources to undertake major new projects. Profits have still not returned to levels prior to the first oil shock, and they vary considerably from firm to firm. The rate of profit in many companies needs to rise to ensure their long-term viability, particularly in manufacturing, as the restructuring of balance sheets is not yet complete.
- The fact that R&D spending is concentrated in the hands of a few, very large, multinational concerns suggests that the remaining firms are likely to be less innovative and responsive to change. These large companies dominate production and exports in five key sectors — chemicals (AKZO and DSM), food processing (Unilever), oil refining (Royal Dutch/Shell),

electrical and electronic equipment (Philips) and metals (Hoogovens). While a sizeable number of small firms have grown up around these giants and have progressively oriented their activities towards export markets in view of the limited size of the domestic market, smaller firms still spend relatively little on R&D and are less able to respond to new needs or to improve the skill and technology base of the economy.

- The rate of business fixed investment has been low for the past 10 to 15 years. Since new technologies tend to be diffused more quickly the higher the rate of investment, an inadequate rate of capital formation prevents an economy from maintaining its competitive edge.

Industrial Policy

Industrial policy has been modified substantially since the mid 1970s when government intervention in the form of direct aid to ailing enterprises rose sharply and investment subsidies were structured to channel private sector investment in line with government objectives concerning location and the environment. While policies had already begun to shift towards less intervention by the end of the 1970s, the current Administration believes that government should limit its role to creating propitious conditions for business investment and growth. Direct aid to firms in difficulty has been drawn back. Increasing emphasis has been placed on forward-looking policies to increase the R&D spending in the private sector, to orient government-financed R&D towards serving the needs of the private sector, and to encourage industrial expansion in those areas where growth prospects are strongest. Regarding R&D, the low level of research spending in the bulk of the small and medium-sized firms has been an important consideration in formulating policy. Within the "reindustrialization policy", the government limits its activities to financing studies with business and other groups in those areas where the Netherlands might have a comparative advantage. It is hoped that the informal networks created through these studies will enhance the flow of information among firms and permit common projects to be established where appropriate. Some changes to the financial system have been made to increase the flow of risk capital. In the Private Participation Corporations (PPM), the government shares part of the cost of failure where the private financial sector provides equity capital for new projects of a risky nature. More recently, the Corporation for Development Projects (MIP) has been set up to provide financing for larger projects with strong growth potential. Funds have been largely drawn from government but from

the private sector as well. Industrial policies seem appropriate and well suited to the situation in the Netherlands.

Combatting Unemployment

A second area where government can help over the longer term is the labour market. The fact that labour shortages are appearing in certain sectors with high unemployment suggests that joblessness has a large structural component. Many unemployed are young people, women looking for work in service occupations, often on a part-time basis, or persons seeking jobs in declining industries. The bulk of the unemployed have low education and skill qualifications and limited work experience and, with the average duration of unemployment steadily increasing, their chances of finding work is diminishing. In addition, unemployment is highest among

those age and occupational groups whose wages are near the minimum legal level.

This suggests a need for greater labour market flexibility and an upgrading of skill and education levels. The responsiveness of the labour market would be enhanced by a widening of wage differentials from sector to sector and, while a step in that direction has been taken with the institution of a more decentralized wage bargaining system, it is too early to say how effective that has been. It is important to keep wages from increasing too rapidly in manufacturing, since the effects of international price competition could squeeze profits again. With the demand for skilled labour in manufacturing showing signs of outstripping supply, there could be a tendency for wages there to be bid up. Hence, wages in other sectors, where labour is in excess supply, may need to rise more slowly.

Further reductions in the minimum wage

might help in that direction, accompanied by greater incentives to the unemployed to seek jobs. Reductions in the level of unemployment benefits may encourage those who lose their jobs to search for new work more actively, but they will do little to deal with these structural aspects of unemployment. Tackling this aspect of the unemployment problem is undoubtedly a major challenge facing the Dutch Government. Direct measures to reduce unemployment need to be aimed at training the jobless so that their employability is enhanced. The government has launched some programmes designed to give younger people on-the-job training and experience, and agreements between the social partners on apprenticeship schemes is another encouraging development. But these measures may be inadequate to bridge the widening gap between demand and supply as regards specific skills and work experience. ■

Source: OECD

LIVING CONDITIONS IN OECD COUNTRIES

Social policy is concerned with the distribution of well-being. Complementing the traditional measurement of economic performance, OECD, through its social indicators, has developed a grid of measures of well-being in such areas as health, education, working life and leisure, and financial and personal security.

Following are some of the results of quantifying this grid¹:

Life Expectancy at Birth

From 1950 to 1980, there was a general increase in longevity in all OECD countries for both sexes.

Life expectancy of women in Japan rose from 60 years in 1950 (the lowest in OECD) to 79 years in 1980 (second highest after the Netherlands and New Zealand and on a par with Sweden and Switzerland).

There was also:

- A narrowing of the dispersion between countries of the figures for life expectancy at birth for both men and women. The difference between the two extreme countries — 13 years in 1950 — had been halved by 1980.
- A widening differential between male and female life expectancy (females live longer) by an average of three years for all countries combined.

Perinatal Mortality

In 1950, the average number of perinatal (new-or pre-born) deaths was 38 per 1000 births in OECD countries. Norway had the

lowest figure (28). In 1980, the situation had improved to an OECD average of 12 perinatal deaths per 1000 births, with three countries (Denmark, Finland and Sweden) having less than ten.

Adult Education

After leaving full-time schooling, more than one adult in five under the age of 44 takes part in some type of formal education. The participation rate drops off dramatically for adults above that age.

Leisure Activities

On average, people in OECD countries watched television 12 hours each week, according to the latest available figures (some from the 1970s). On the low side, the Norwegians viewed TV 7 hours, followed by the Finns and Swiss, each watching 9 hours while Americans viewed TV almost 16 and the Japanese 24 hours.

By contrast, the average person spent just over 2 hours actively engaged in sport and other types of recreation. The Americans spent 4.6 hours, the Finns 4 hours, the British 1.2 hours and the Japanese 0.6 hours.

Personal Safety

In a number of OECD countries, more than 40 per cent of the women in large cities are afraid to walk alone in their neighbourhood at night.

1. The quantification appears in book form under the title *Living Conditions in OECD countries, A Compendium of Social Indicators, OECD, 1986.*

New OECD Publications

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OECD SCIENCE AND TECHNOLOGY INDICATORS. No. 2 – R & D, Invention and Competitiveness (March 1986)

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