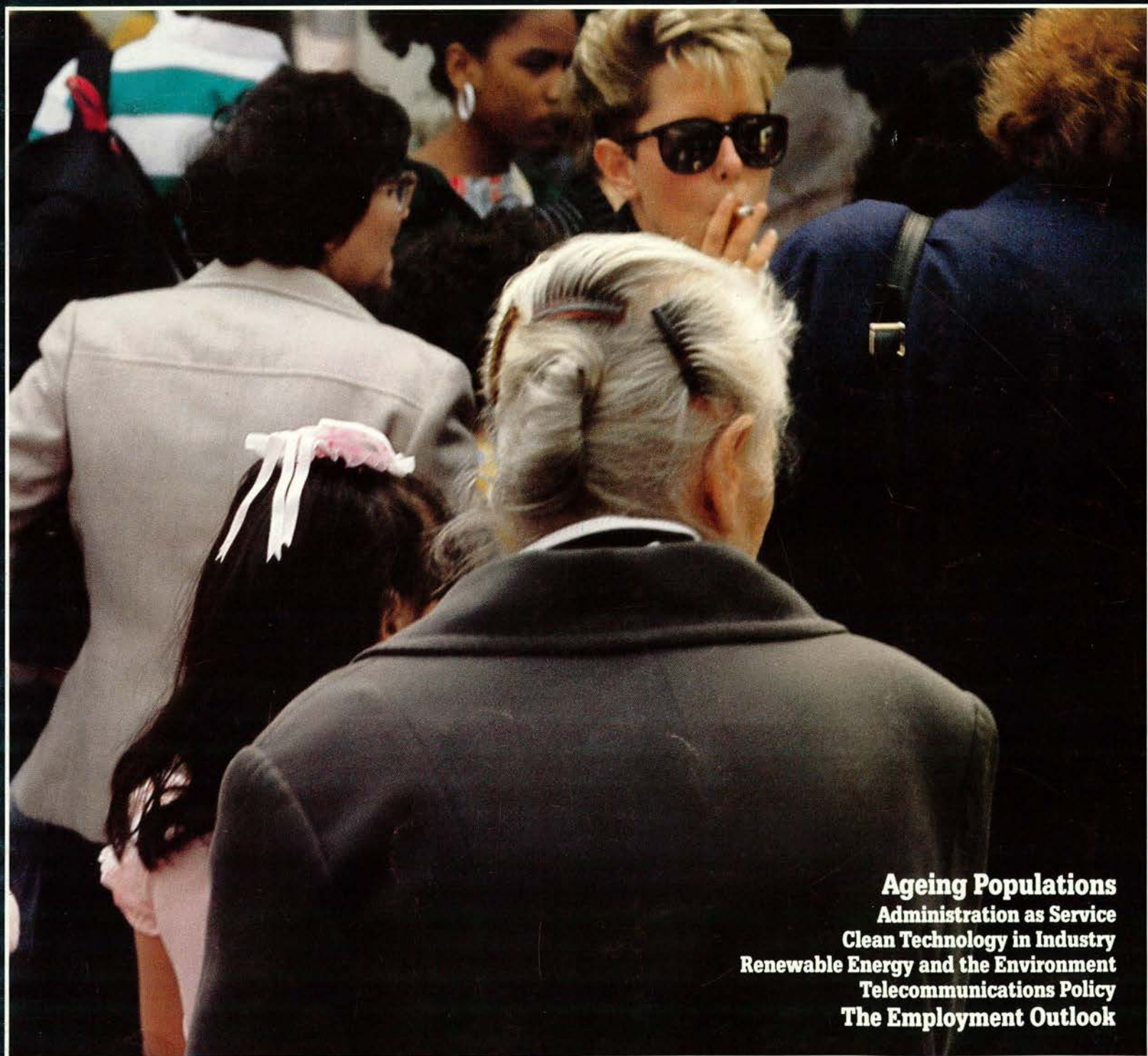


# the **OECD** **OBSERVER**



**Ageing Populations**  
**Administration as Service**  
**Clean Technology in Industry**  
**Renewable Energy and the Environment**  
**Telecommunications Policy**  
**The Employment Outlook**

No. 148 – OCTOBER/NOVEMBER 1987

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# the OECD OBSERVER

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# Making Provision for Ageing Populations

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by Maria Maguire<sup>1</sup>

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*Low birth rates and longer life spans are increasing the proportion of elderly people in most OECD countries. In some European countries, present birth rate trends could soon lead to a downturn in the size of the total population and in the number of working age people, exacerbating the problem of financing pensions, health care and welfare services for the aged. The following article looks into the question of how social policies need to be adapted now to meet the demographic problems expected early next century.*

*A species in danger of extinction? Not likely, of course, but fertility rates among OECD countries are already below replacement levels.*

## Fewer Babies

Fertility rates in most OECD countries have fallen steeply since the mid-1960s and are now below the level required to replace the population. In many cases the number of young people is already falling, and there is no sign at present of any significant recovery in birth rates.

The effects of low fertility will be magnified after the turn of the century by the passage into old age of the people born during the post-war "baby boom" (from the early 1940s to the mid-1960s). The result will be a sharp rise in the space of just two or three decades in the proportion of the population aged 65 and over in many countries, although in some the increase may be more gradual (table 1). In Japan, where birth rates have been on an almost unbroken downward trend since the late 1940s, the proportion of the elderly is already rising rapidly. Across the OECD area as a whole, the proportion of the population aged 65 and over is projected to increase from just over 12 per cent at present to almost 22 per cent in 2040, when the ageing trend is expected to peak.

## The Over-80s

At present the most rapidly increasing population group in many countries is the very old – those aged 80 or over – and with further gains in life expectancy on the horizon, this trend seems set to continue over the coming decades. Since 1950, average life expectancy at birth has risen by eight and a half years for women and six years for men.

Current projections indicate that even with modest increases in life expectancy, the proportion of very old people in OECD countries could rise from between 1 and 3 per cent of the population now to between 6 and 9 per cent by the middle of the next century. Their number in the OECD area as a whole is projected to have increased by 45 per cent by the year 2000, and to treble between now and 2040.

## A Smaller, Older Workforce

Population ageing has important implications for the size and age structure of the potential workforce. The number of young people entering the labour market is already tapering off in many countries and by the end of the century the working age population (15-64) will be shrinking in some European countries and in Japan. Barring a rapid upturn in birth rates, an increasing number of OECD countries will

## 1. POPULATION AGED 65 AND OVER – 1980-2050<sup>a</sup> as % of total population

	1980	1990	2000	2010	2020	2030	2040	2050
Australia	9.6	11.1	11.7	12.6	15.4	18.2	19.7	19.4
Austria	15.5	14.6	14.9	17.5	19.4	22.8	23.9	21.7
Belgium	14.4	14.2	14.7	15.9	17.7	20.8	21.9	20.8
Canada	9.5	11.4	12.8	14.6	18.6	22.4	22.5	21.3
Denmark	14.4	15.3	14.9	16.7	20.1	22.6	24.7	23.2
Finland	12.0	13.1	14.4	16.8	21.7	23.8	23.1	22.7
France	14.0	13.8	15.3	16.3	19.5	21.8	22.7	22.3
Germany	15.5	15.5	17.1	20.4	21.7	25.8	27.6	24.5
Greece	13.1	12.3	15.0	16.8	17.8	19.5	21.0	21.1
Iceland	9.9	10.3	10.8	11.1	14.3	18.1	20.1	21.1
Ireland	10.7	11.3	11.1	11.1	12.6	14.7	16.9	18.9
Italy	13.5	13.8	15.3	17.3	19.4	21.9	24.2	22.6
Japan	9.1	11.4	15.2	18.6	20.9	20.0	22.7	22.3
Luxembourg	13.5	14.6	16.7	18.1	20.2	22.4	22.0	20.3
Netherlands	11.5	12.7	13.5	15.1	18.9	23.0	24.8	22.6
New Zealand	9.7	10.8	11.1	12.0	15.3	19.4	21.9	21.3
Norway	14.8	16.2	15.2	15.1	18.2	20.7	22.8	21.9
Portugal	10.2	11.8	13.5	14.1	15.6	18.2	20.4	20.6
Spain	10.9	12.7	14.4	15.5	17.0	19.6	22.7	22.9
Sweden	16.3	17.7	16.6	17.5	20.8	21.7	22.5	21.4
Switzerland	13.8	14.8	16.7	20.5	24.4	27.3	28.3	26.3
Turkey	4.7	4.0	5.0	5.5	7.0	8.9	10.2	11.5
United Kingdom	14.9	15.1	14.5	14.6	16.3	19.2	20.4	18.7
United States	11.3	12.2	12.2	12.8	16.2	19.5	19.8	19.3
<b>OECD average<sup>b</sup></b>	<b>12.2</b>	<b>13.0</b>	<b>13.9</b>	<b>15.3</b>	<b>17.9</b>	<b>20.5</b>	<b>21.9</b>	<b>21.2</b>

(a) 1980 actual; 1990 to 2050 projections.

(b) Unweighted.

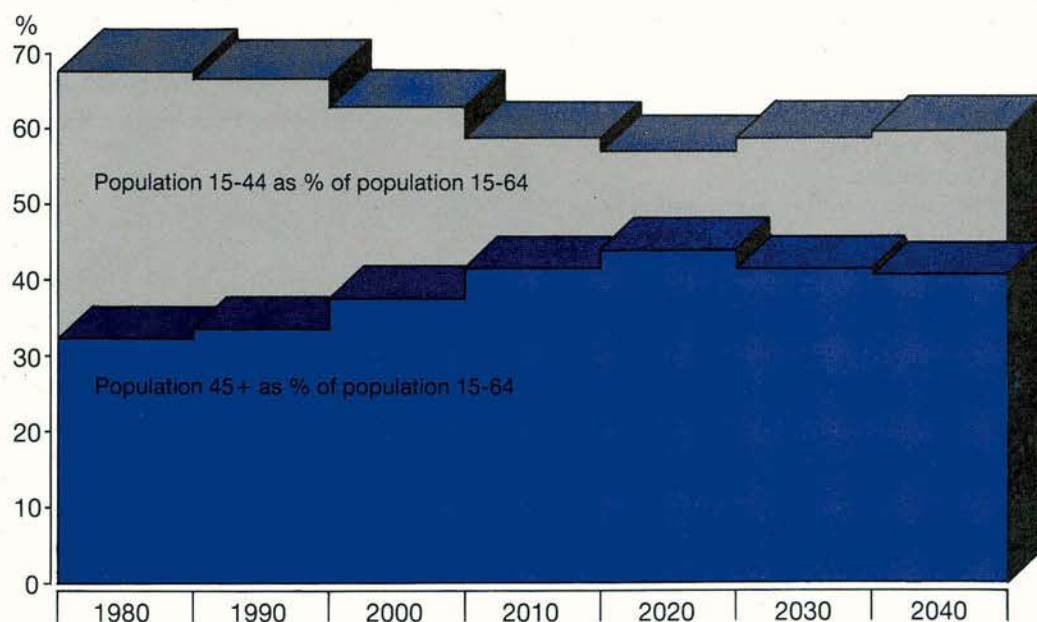
Source: OECD.

face a similar situation in the early decades of the next century, raising the prospect of potential labour shortages.

The diminishing supply of young workers is also leading to an older workforce. By 2020, an average of around 43 per cent of the working age population in the seven

largest OECD countries will be aged 45 or over, compared with just over 30 per cent today (chart A). In Germany and Japan, where the ageing trend is particularly pronounced, it is expected that 40 per cent of working age people will be over 45 by the year 2000. ▶

## A. PROJECTED TRENDS IN AGE STRUCTURE OF WORKING POPULATION 1980-2040 Average of Seven OECD Countries<sup>1</sup>



1. Canada, France, Germany, Italy, Japan, United Kingdom, United States.

Source: OECD

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

## Growing Dependency Burden

These changes in age structure imply a substantial increase in the burden of dependency on the working population, which supports both the young and the retired. Chart B shows that in the seven largest OECD countries old-age dependency ratios – the number of people aged 65 and over relative to those of working age – could approximately double between now and 2040. Currently there is one elderly person for every five people of working age; it is projected that by 2040 there will be two.

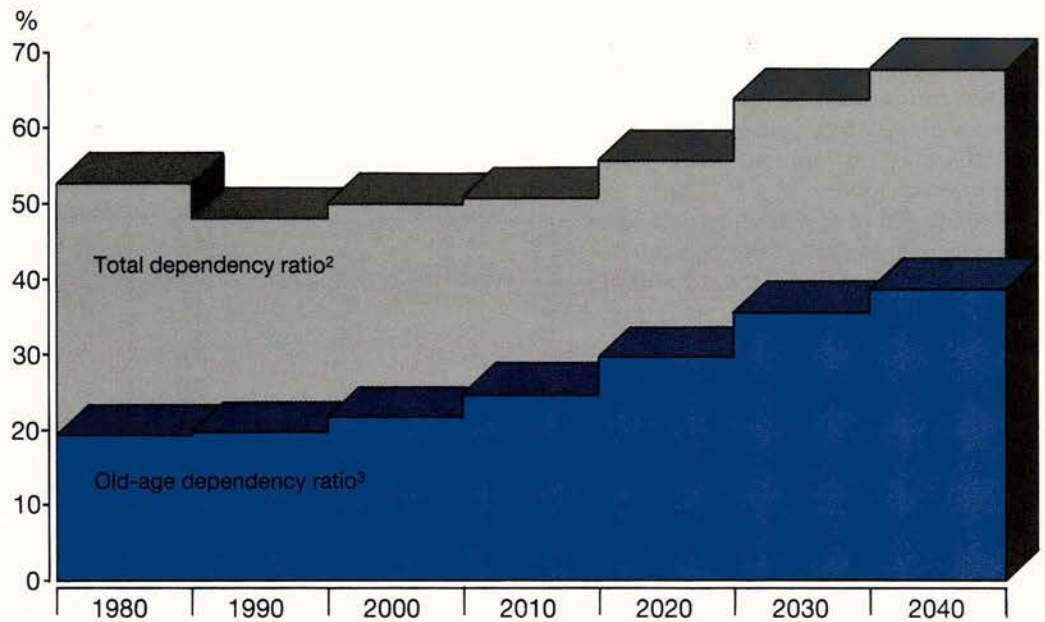
This development will be offset to some extent by a decline in the number of children relative to the working age population. Although the extent of this offset will depend on future birth rates, it is unlikely to be sufficient to prevent a substantial increase in *total* dependency ratios – young *and* elderly people relative to the working age population – when the baby boom generations begin to retire around 2010. Similar increases in the old-age and total dependency ratios are projected for most other OECD countries, although the timing and magnitude differ.

## Implications for Social Spending

To the extent that the elderly depend on public programmes for financial support and social services, real government expenditure on pensions, health care and welfare services will need to grow substantially in the coming years to accommodate demographic pressures. In the event of continuing low birth rates this increase may be offset to some extent by reduced outlays on family benefits, education, and other services for the young. But this offset is likely to be relatively small because per capita public social expenditure on the elderly exceeds that on the young by a factor of between two and four in most OECD countries.

It is estimated that in the seven largest OECD countries the ageing of the population could swell the total cost of social programmes in real terms by about one-third on average between now and 2040 (chart C). Without any change in the real level or scale of benefits provided, increases in the number of people aged 65 and over would almost double the cost of pension programmes, and would raise the cost of health care programmes by about 40 per cent. If expenditure on education and family benefits decreased directly in line with the projected number of young people (which is unlikely), outlays on these programmes would decline by about 20 per cent and 15 per cent respectively.

**B. PROJECTED DEPENDENCY RATIOS 1980-2040**  
Average of Seven OECD Countries<sup>1</sup>



1. Canada, France, Germany, Italy, Japan, United Kingdom, United States.
2. Young (0-14 years) and elderly (65+) relative to working age (15-64) population.
3. Elderly (65+) relative to working age (15-64) population.

Source: OECD

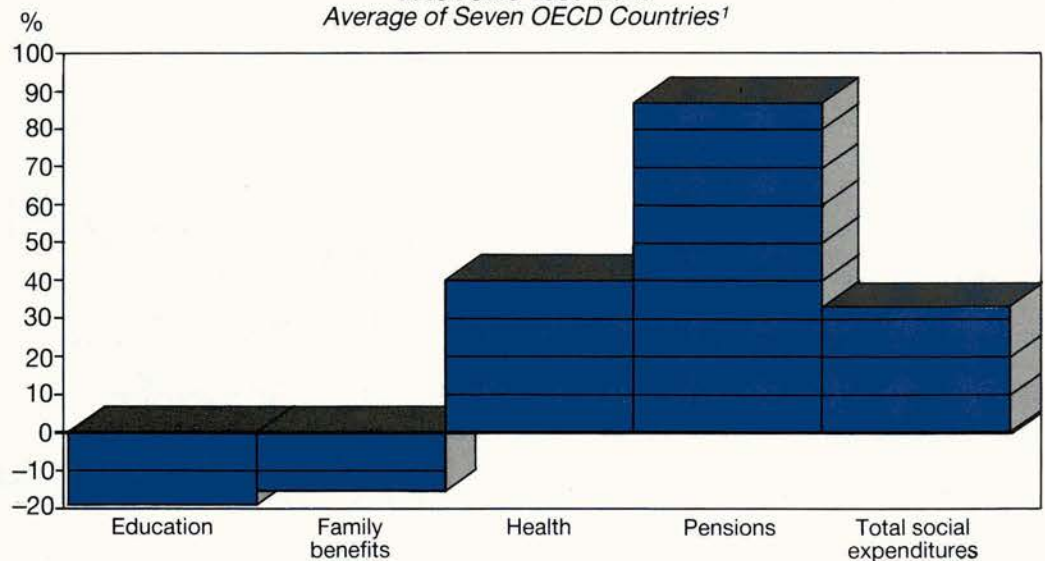
A cumulative one-third increase in the cost of social programmes over the next half century implies that demographic change will pre-empt a significant share of the resources available for these programmes, thereby reducing the potential for improvements in benefits and services. Moreover, a number of countries face potentially large increases in the expenditure burden per worker purely as a result of demographic pressures (table 2). In the majority of cases this source of additional pressure on resources is unlikely to become very great until the early years of the next century, but after that a progressively larger gap is almost certain to open up

between the cost of social programmes and the size of the working age population which has to finance them.

## Sharing the Cost of Demographic Change

In recent decades, social benefits have, on average, risen in line with or even exceeded the growth rate of productivity in the economy as a whole, so that the living standards of the elderly have at least kept pace with those of the working population. If per capita benefits were to continue growing in the future at around the rate of

**C. PROJECTED CHANGE IN SOCIAL EXPENDITURES DUE TO DEMOGRAPHIC FACTORS 1980-2040**  
Average of Seven OECD Countries<sup>1</sup>



1. Canada, France, Germany, Italy, Japan, United Kingdom, United States.

Source: OECD



*Per capita public spending for the elderly is two to four times higher than for the young. A low birth rate will therefore not make up the increase in costs accompanying the ageing of the population.*

growth of aggregate productivity, expenditure increases due to demographic factors would have to be financed by higher taxes and social security contributions.

Alternatively, the benefits provided to the elderly population could be broadly maintained at their present level in real terms; this would leave some margin for meeting the cost of the rising old-age dependency burden out of productivity growth, but would result in a substantial reduction over time in the living standards of the elderly relative to the working population.

Perhaps the most likely scenario is that the costs of demographic change will be shared between the working and elderly populations. That would imply some curtailment of social benefits relative to what might have been feasible in the absence of demographic pressures, but also some increase in the financial burden on the working population.

### More Women and Older People at Work

The higher the proportion of the population actually in work, the lighter will be the individual load of paying for social benefits. A reduction in unemployment rates would ease the financing burden, but labour force participation trends will also be of crucial importance. Older people's work patterns will be particularly important because they affect the size of both the workforce and the retired population.

The labour market can, in some respects, be expected to adjust automatically to demographic movements: with fewer young people entering the labour force, unemployment rates may fall, perhaps encouraging more married women to go out to work. Similarly, older workers may be inclined to defer retirement, and improved work opportunities might also lead a higher proportion of young people to start work early instead of continuing their education past compulsory level.

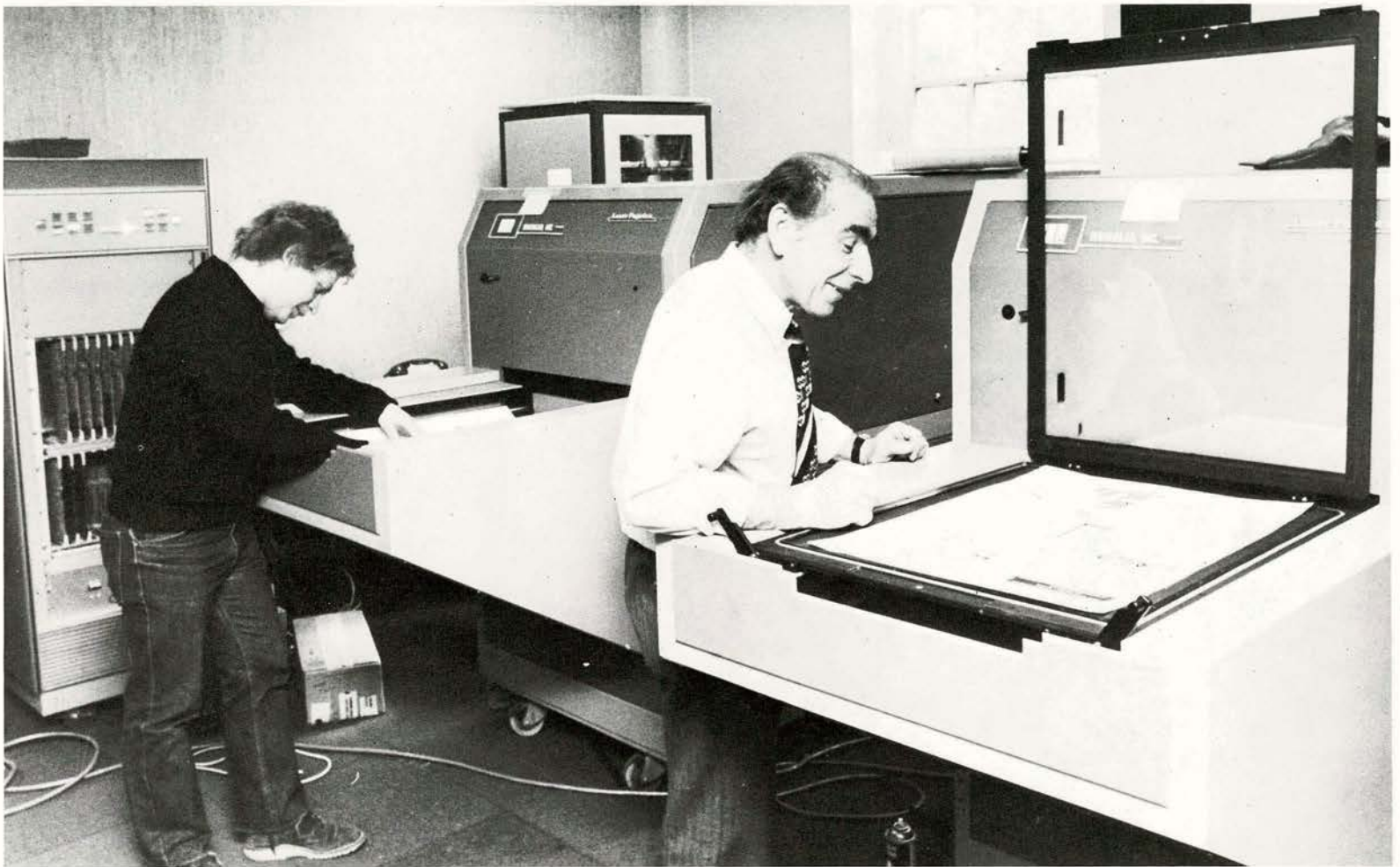
However, changes in labour force participation patterns may also suggest policy intervention by governments. Some coun-

## 2. IMPACT OF DEMOGRAPHIC CHANGE ON SOCIAL EXPENDITURE AND FINANCING BURDENS – 1980-2040<sup>a</sup>

1980 = 100

	1990	2000	2010	2020	2030	2040
<b>Canada</b>						
Social Expenditure	111	124	141	162	181	187
Financing burden per head of 15-64 age group	100	103	109	125	143	145
<b>France</b>						
Social expenditure	106	109	116	124	130	128
Financing burden per head of 15-64 age group	99	100	104	116	128	132
<b>Germany</b>						
Social Expenditure	98	104	104	103	106	97
Financing burden per head of 15-64 age group	95	106	113	124	149	154
<b>Italy</b>						
Social Expenditure	103	103	108	111	113	107
Financing burden per head of 15-64 age group	97	99	106	116	131	139
<b>Japan</b>						
Social Expenditure	113	125	141	141	136	140
Financing burden per head of 15-64 age group	103	115	137	142	140	154
<b>United Kingdom</b>						
Social Expenditure	98	97	101	105	113	110
Financing burden per head of 15-64 age group	95	93	96	101	112	111
<b>United States</b>						
Social Expenditure	107	112	125	147	162	165
Financing burden per head of 15-64 age group	99	96	99	117	132	131

(a) Projections.  
Source: OECD.



*Rising life expectancy and demographic imbalances appear to justify raising the average retirement age. But would the labour market permit it?*

tries may choose to encourage immigration to increase the size of the workforce. And policies towards older workers may also need to be reconsidered. Despite increasing longevity, the average retirement age has declined significantly over the past several decades, a trend which has been encouraged in many countries in recent years by public and private early retirement schemes. A continuation of this trend would add substantially to the cost of pension and health care schemes as the population ages.

In the event of some curtailment both of the generosity of public pension schemes and of early retirement options, older workers may choose to remain in the labour market longer. In turn this may lead to a need for a variety of changes, including more flexible retirement ages and occupational pension schemes, wage structures which reflect age-productivity profiles, provision for re-training older workers and greater access to part-time work.

### **Pension Systems Under Pressure**

In addition to demographic change there will be other factors pushing up the cost of retirement pensions in future years. A rising proportion of the elderly will be eligible for social security benefits because of the extension of pension schemes to a broader cross-section of the population in recent

decades. Many more women will also be retiring with full pension rights as a result of increases in female labour force participation rates. Average benefit levels are also set to rise in many countries where the prescribed contribution period for receipt of full benefits has not yet elapsed, or where improvements made to the benefit structure during the affluent 1960s and 1970s have not yet had their full effect. Some pension systems will not reach maturity until well into the next century.

Although demographic pressures are still 15 to 20 years away in most countries, reforms need to be put in place well ahead of time in order to allow people to plan for their retirement. There is likely to be some scope for reducing the scale of public pension commitment because expanding occupational pension provisions, increased private saving to offset possible curtailment of state pension benefits, and rising rates of home ownership in some countries, mean that tomorrow's pensioners will generally be more financially secure than are today's.

#### **Two Options**

There are basically two available options for moderating the future growth of state pension outlays. The first is to reduce real benefit levels, either by cutting pension payments to new retirees or by changing the indexation formula for benefits. Either approach would probably need to be

accompanied by policies to encourage occupational pension schemes and private saving, and might also need to be supported by the introduction of basic income provisions to protect the less well-off amongst the elderly.

The second option is to raise the average retirement age, possibly in combination with more flexible retirement policies. This could be justified on grounds of rising life expectancy and demographic imbalances, but would be viable only in the context of improved labour market conditions and policies to encourage the employment of older workers.

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### **Health Care in Old Age**

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Due to the much higher incidence of chronic disease and illness in old age, increases in the number of very elderly people will lead to a substantial rise in health care costs unless longer life expectancy is accompanied by an improvement in the state of health of older age groups. Advances in medical technology could create strong pressures for additional spending that could add substantially to the costs of demographic change. The general need to control public health care spending and the particular problems associated with providing appropriate health care for the aged raise not only financial questions but also a number of social and moral issues.





*Lack of money should not prevent an elderly person from receiving proper treatment – specialized or long-term – however governments choose to cope with the anticipated rise in health care expenditures.*

Rising health care costs will almost certainly necessitate increased taxation, but there is also likely to be potential for requiring the more prosperous sections of the elderly population to contribute through health insurance premiums or increased cost-sharing. At the same time it will be necessary to ensure that those who require long-term care are not exposed to the risk of impoverishment and that inability to pay is not a barrier to access to quality health care. Methods of paying health care providers may also need to be changed in order to encourage a more cost-effective approach to delivering health services to the elderly.

#### **Long-Term Care**

Provision of long-term care for the growing numbers of very elderly people will be one of the main challenges for health care systems. There are wide disparities amongst OECD countries in the availability of long-term institutional care for the elderly and in the relative use-rates of hospitals, nursing homes and old-age homes to provide such care. Increasing interest is now being shown in possibilities for the provision of long-term care in non-institutional settings, with a view both to reducing the costs of care and improving the quality of life of elderly patients. However, community-based care should not be regarded as a cheap alternative to institutional care. Provision of the necessary standard of care will require the development of a well-co-ordinated system of medical, para-medical and social services and suitable housing facilities, including sheltered housing, and it is likely to be some time before savings from reduced use of institutional care emerge. It must also be recognized that for patients with greater levels of disability, institutional care will continue to be necessary.

Informal care in the home, mainly by female family members, plays a major role in maintaining the elderly in the community. In the future, however, the number of relatives available to provide care is likely to diminish because of declining family size and the increasing proportion of women in paid employment. Possibilities for encouraging the development of new types of informal care networks need to be explored, and informal care needs to be backed up by a range of medical and social services. ■

# Administration as Servi

**News item:** a young woman enters a social security office in a European capital, accompanied by her two children, a five-year-old boy and a baby. Wielding a hammer, she smashes every window and screen in sight. Why? Exasperation. For weeks she has been waiting for a special heating allowance and instead of the money she has received the reply: "Your claim is being processed". The week before her rampage, she telephoned the office to warn them: "Either I get my money or I'll come and wreck the place". She lived up to her promise. Now the office is closed and the staff refuses to return to work until they are protected by security guards.

The windows of downtown government offices in the same city are smashed an average of 12 times a week. In another district, dissatisfied claimants have fire-bombed the social security benefits bureau. Public officials in the city dread Thursdays, for that it is the day when people who, having no fixed address, cannot receive their allowance through the post and call at the office in person. Every week, crowds in waiting rooms designed for 50 people swell to twice that number. Some offices, which normally remain open until 5.30 p.m., close before lunch to deal with the backlog of files.



**T**his story would simply be a news item, exceptional perhaps because of the violence, if it were not symptomatic of a general problem apparent in almost every OECD Member country. They are all suffering, with varying intensity, from dysfunctions of administration leading to a waste of time and money, low staff efficiency and anger and weariness on the part of the public. Even more, they add up to a braking effect on economic activity. Such problems become magnified as the administration plays an ever larger part in the daily lives of citizens and businesses.

This expansion of the public sector's role can be seen in the figures, although it is difficult to translate them into a real indication of the weight of the state in the economy. Yet, for example, its impact is apparent in Sweden, where government expenditure accounted for 60 per cent of GDP in 1984, and in others, like Ireland, where it has risen from 33 per cent to 50 per cent between 1979 and 1984. The share of the public sector in total employment increased, on average, from 11 per cent in 1960 to 18.4 per cent in 1982. Here again the rise was particularly substantial in Sweden: 12.8 per cent in the early 1960s expanded to 31.8 per cent 20 years later.

## Government's Role in Everyday Life

Up to World War I, government was concerned with enforcing law and order, ensuring national defence and providing a certain number of limited social programmes. Today, it is involved in fixing wages and financing and restructuring industry. In short, both individuals and firms are becoming increasingly dependent on the administration – from unemployment benefits to export-licenses. As clients experience the larger presence of government in their lives, they bridle more and more at its deficiencies (exchange regulations, building

# ce: The Public as Client

permits, taxation, etc.). With assistance or unemployment benefits, clients sometimes hold the government responsible for their situation and can hardly be said to appreciate having to deal with its services. For a firm establishing an investment programme that depends on regional development aid, questions like the access to information, the complexity of administrative regulations and the efficiency with which the administration handles its file are matters of economic life or death.

The OECD Member countries are aware of the problem. The Organization has recently published a report on the administration-client relationship, describing its impact on economic efficiency and stressing that it should not be an obstacle to development.<sup>1</sup>

Most Member countries have accordingly introduced programmes of administrative reforms in recent years to improve efficiency. Some, notably Ireland, have adopted the values of the private sector. The Irish Government's White Paper on the public service, published in 1985, states: "The recognition of the primacy of the customer must be paramount". This principle is revolutionary. Until now, the administration, in whatever country, has neither attempted to meet the specific requirements of individuals nor to treat them as responsible and demanding clients.

The administration has seen itself as serving the general interest, often treating clients as irresponsible children whom it commands and protects. Its laws and regulations are supposed to serve the interests of all, but are drawn up by the few, often without the direct participation of those for whom they are intended. As the OECD points out, public servants are rarely trained to communicate with the public and are responsible, not to their "clients", but to their superiors, who determine their promotions, assignments and sanctions.

Counter staff, who constitute the real "interface" between the administration and clients, are chosen not for their ability to communicate, but according to seniority or competence – which often means newness in the profession or incompetence. As the OECD points out, "The interface position, itself, is undervalued, usually underpaid, and not looked to for input for managerial or policy decisions". This status may explain the lack of openness of interface staff. One government has had to give up

the idea of asking public servants to wear name-tags in an effort to make administration less anonymous. They objected because they feared being attacked by members of the public. While Americans or Swedes all know that their postwoman is called Suzie or Olga, citizens of other countries may only have contact with "window 11 or 15".

The very ambiguity of the administrative function as a source of both services and constraints does not help bring about reforms to ensure the primacy of the client. The government's interests are sometimes contrary to those of the individual citizen. For example, an administration eager to inform taxpayers of their rights, through a campaign to encourage better use of tax reliefs by clients and greater responsiveness on the part of staff, might experience a fall in tax yield.

Public services must comply, of course, with the instructions of the members of a democratically-elected government. But, how can the administration be managed and ministerial accountability be made effective when the real decisions are made at the counter? When the citizen can appeal only through legal processes or political intervention?

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## What Can Be Done?

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What then can be done? The OECD's view is that in a period of budgetary restraint it is difficult to foresee a wide-ranging reform, and pointless to take only superficial measures. The problem is in fact as much bound up with organizational weaknesses as with an administrative culture based on the power of the state over the citizen. In the opinion of the authors of the report, the need is to act pragmatically and to change key "factors" radically so that "the effects are deep and have widespread repercussions".

The first question is what does the client want? Above all, he desires a "responsive" administration – an administration which is understandable, easily-approachable (office hours, premises), capable of meeting his or her specific requirements, open to dialogue and participation and, finally, which offers the possibility of easy and rapid appeal (mediator, ombudsman). There are many different ways to satisfy such expectations. As the report recommends, it is preferable to solve the problem of administrative respon-

siveness at the source, when regulations are drafted, in order to ensure that they are consistent and adaptable to the needs of clients and capable of being implemented by the administration. It makes no sense to increase the red tape in getting an export licence when the aim is to boost foreign trade.

The OECD's view is, however, that first priority should be given to personnel and administrative organization. So, for staff in contact with the public, improved status, better training and greater discretion are three key points. In Norway, for example, administrators and middle-level managers are required to work for six months in positions dealing with clients – before they are promoted. In many countries (Austria, Denmark, Finland, etc.), the administration has organized courses to encourage public servants to be clearer when they communicate with clients.

Another option is a reforming of the organization of the hierarchy, as carried out recently in Australia, to set up "flatter" structures, eliminating excessive layers of supervision and thereby cutting waste and frustration.

The accessibility of offices (physical arrangements, opening hours) is an important factor in administrative responsiveness. In the Netherlands, the tax authority operates a fleet of "tax buses" which carry public servants around the country to help clients with tax problems. To save clients' time, France has launched a "single window" campaign which reduces the division of tasks and the number of offices working on the same file.

The OECD report stresses that, whatever the measures taken, it is essential that they be backed up by political will. To that end, certain countries have set up advisory structures at the highest levels of government. In Turkey, the chief adviser to the Prime Minister has been assigned the responsibility for developing a comprehensive reform strategy. These efforts emphasize the importance of the problem, and as the report concludes, no government's economic, political or social reform can be successful without a government administration that is responsive to the needs of enterprises, the labour force and citizens. ■

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1. *Administration as Service: The Public as Client*, OECD, Paris, 1987. (Study conducted under the auspices of the Technical Co-operation Committee.)

# Clean Technologies: A Dilemma for Industry

*Clean technology has given industry the opportunity to produce without polluting. But often this involves modifying production methods and altering the way a company operates. Thus, in deciding to invest in clean technology, a manager must consider not only the benefits of environmental protection, but also the economic and social factors associated with the innovative techniques. A recent report by the OECD has studied the difficulties of making these techniques more a part of an industry's standard equipment and the measures taken by some countries to encourage their use.<sup>1</sup>*

**A**t first glance, clean technology appears to offer numerous benefits. Some advocates claim it is high time clean technology replaced "end-of-pipe" (or "add-on") solutions, such as filters, which are now the most frequently used methods in the fight against industrial pollution (box). The new approach is not only easier on the environment, runs the argument, it is also often cheaper, saving on energy and raw materials.

According to a study of 600 clean technology applications in France, 65 per cent have cut down water consumption, 67 per cent have saved raw materials, 26 per cent have led to waste recycling, 21 per cent have reduced the risk of accidents, 20 per cent have improved working conditions and 8 per cent have resulted in energy savings. In themselves, the results provide convincing arguments for governments to encourage wide-scale adoption of the new techniques. But reality has tempered government optimism. Just singing the praises of some new process is not enough to make management change its practices overnight. At present, non-polluting production methods are not widely applied in the OECD area, and in certain Member countries account for only 20 per cent of the total investment in pollution control.

What is the decisive reason that makes a manager choose to retool his plant to introduce clean technology? His sensitivity towards the environment? His ideas of cost-effectiveness and efficiency? His fear of government pressure? Answers to these

questions will to a large extent define the best policies for promoting and spreading the new methods.

## An Unfavourable Economic Climate

Companies that are most likely to invest in non-polluting industrial technology are those actually building new plants and

those in expanding industry sectors. But the current economic situation of low growth and a slowdown in factory construction hardly encourages innovation. In addition, the worst polluters (with the exception of the chemical industry) are companies with weak growth trends in more traditional sectors, such as mining and metals, foodstuffs, textiles, clothing and leather. The opportunity among these industries to use clean technology comes when the only option left to halt the decline is a major restructuring programme.

Even an ecology-minded manager cannot afford to invest in clean technology on the strength of his beliefs alone. He normally can afford only to invest in methods that are more efficient in terms of labour, energy and raw materials. If a by-product is a cleaner environment, so much the better — as was the case of dual-flow jet engines, which were designed to improve fuel consumption, and then also turned out to be less noisy than their single-flow counterparts.

Managers in the OECD countries have shown a preference for conventional end-of-pipe solutions to control pollution. And this conservative approach has not been without its rewards: it requires less initial investment and carries fewer risks. It also involves equipment which is easily available, well-known and can be regularly serviced. Added on at the end of the production line, the technology has the

## POLLUTION CONTROL IN INDUSTRY

*There are three basic types of industrial pollution control:*

- 1. Treating waste as it is discharged from the production unit by adding end-of pipe (or "add-on") measures such as dust filters, purification plants and sedimentation tanks. This is the conventional approach; it has the merit, or the drawback, of not interfering with existing production techniques.*
- 2. Transforming waste so that it can be used again in another form, either by the same production unit or by a different industrial installation. This method is referred to as "waste enrichment".*
- 3. Recycling waste within the production unit (by adapting a process where necessary) to limit or avoid the production of excess waste. The ideal solution is a system of closed-circuit production.*

1. The Promotion and Diffusion of Clean Technologies in Industry (OECD Environment Monograph No. 9).

advantage of not wasting earlier investments. In most cases, the manager who chooses the less innovative solution profits most and leaves risk-taking to others. Few managers feel they must lead their industry in using non-polluting production techniques; in fact, only very large firms will agree to full-scale testing of unproven techniques, and even then it is often to enhance their image or in response to government pressure.

### The Easy Way Out

This is one of the paradoxes of environmental protection in industry. In many cases, by using conventional pollution control equipment, a manager shows he is keen to combat pollution and respect the law. As a reward for his good behaviour, the authorities will give him their blessing and leave him to operate in peace. If he chooses, however, to reorganize his production process and install clean technology he will receive only the support of the

small part of government in charge of promoting the avant-garde techniques. But he will probably also arouse the mistrust of the inspection and supervisory departments to whom he must prove the effectiveness and legitimacy of his project.

Indeed, the introduction of clean technology is not really supported by the pollution control industry itself. Firms turning out anti-pollution equipment find it in their interest to market standardized products rather than sophisticated integrated systems, which require expensive, in-depth research and are harder to sell. The specialized nature of modern production techniques makes it difficult to create a clean technology system for different industries. Anti-pollution manufacturers therefore favour slow and gradual changes in their range of products so as to recoup their investment, make a profit and keep risks to a minimum.

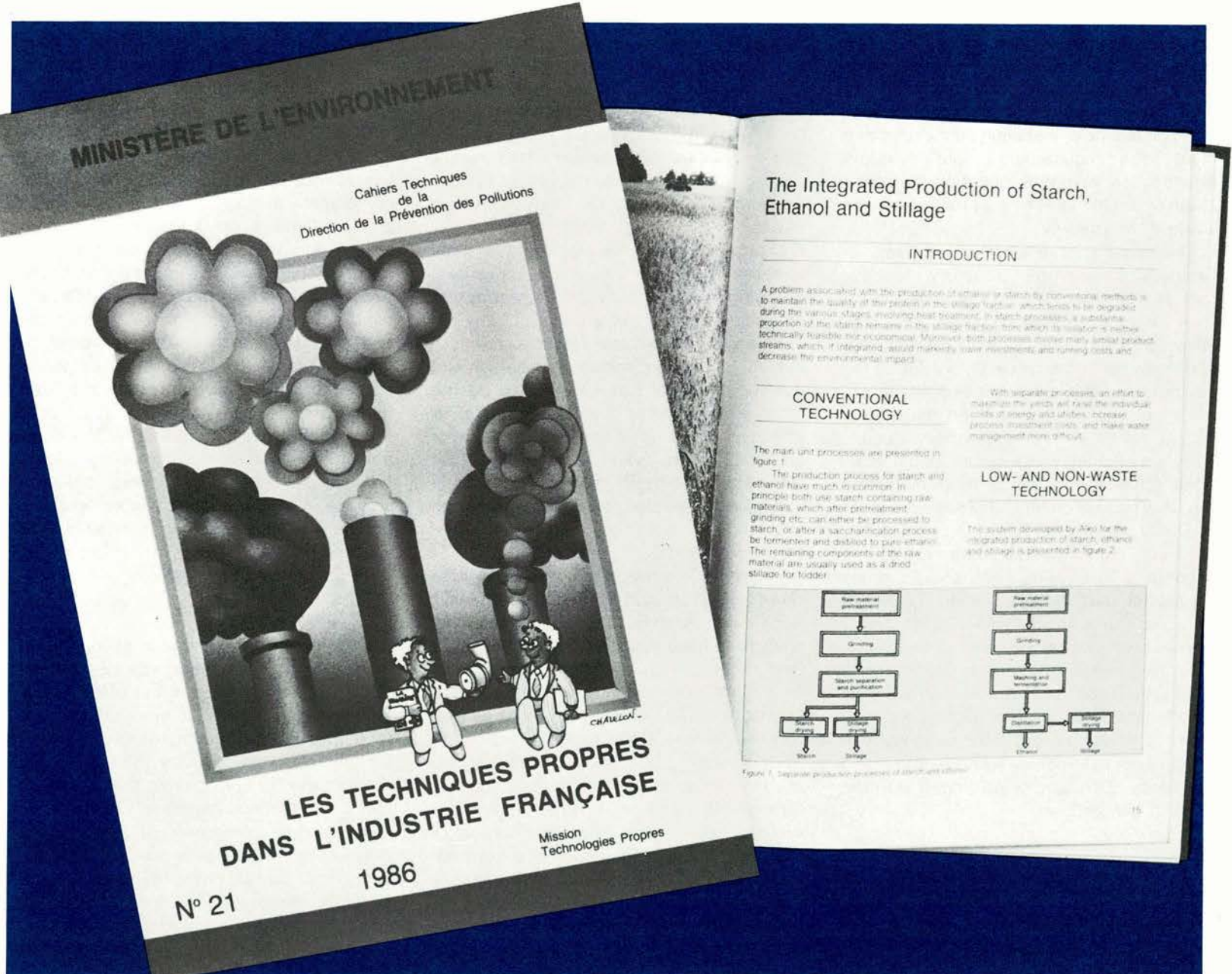
*Government actively promote advanced anti-pollution methods, as shown in the myriad publications they produce for industry. But in fact they tend to encourage mere add-on solutions.*

It is, of course, difficult, or even unfair, to apply this rule to all clean technology sectors. The pollution control industry is capable of innovation: in Germany, for example, research and development expenditure in the sector is higher than in industry as a whole (DM 5,200 per employee in 1981 compared with DM 3,900).

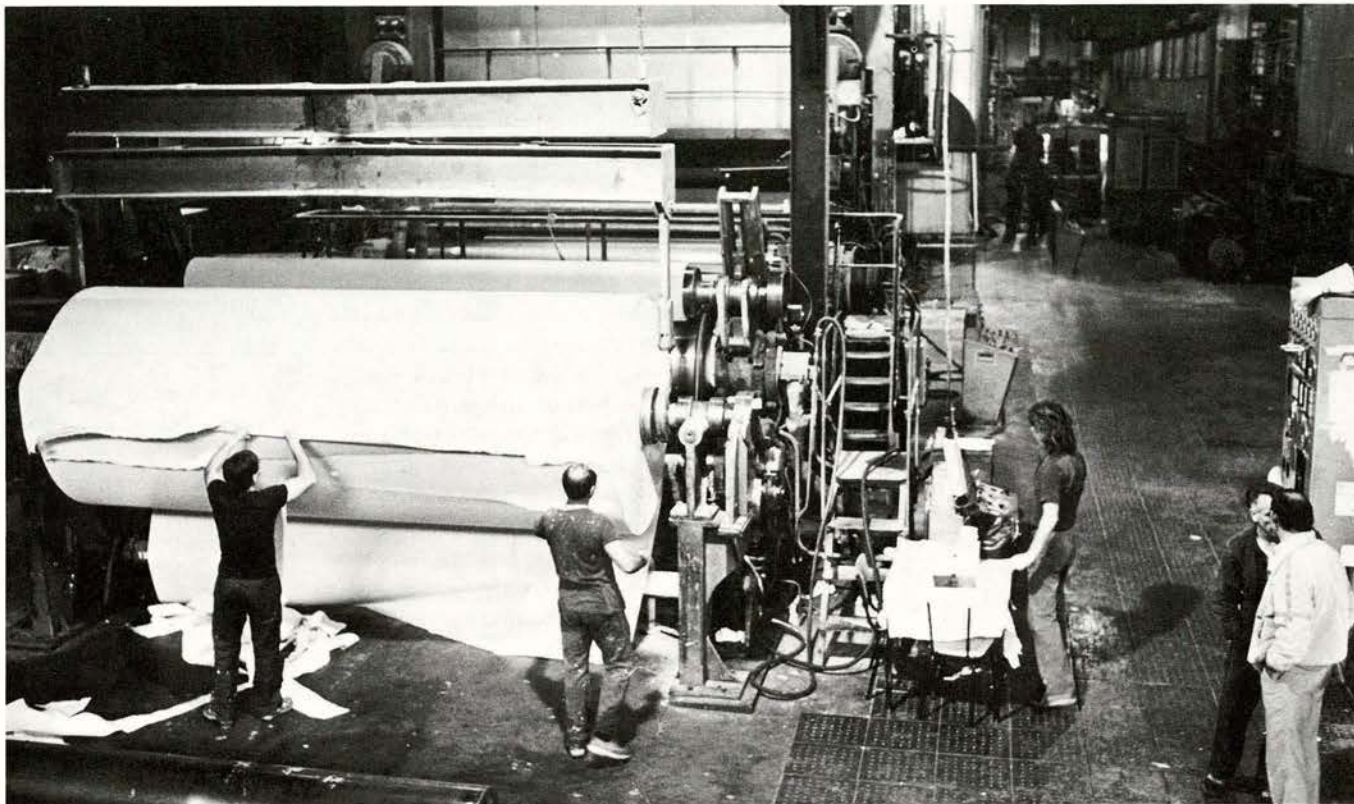
### Ill-Suited Regulations

The industrial sector is wary of clean technologies. Even more surprising, however, is that governments – the torch-bearers of the advanced techniques – should, be it consciously or not, defend the conventional methods.

Despite official endorsements of innovative technology, the authorities themselves, through regulations for obtaining permits, authorizations and subsidies, often encourage adoption of end-of-pipe treatment systems. For example, in certain countries, companies can obtain subsidies



*Clean technologies reduce air and water pollution in the pulp and paper industry at an acceptable cost.*



to reduce particle emissions only if they can prove that the money will be spent effectively. This condition is fairly easy to satisfy with conventional solutions. In some industries, for example, installing dust extractors meets the requirements, but systems attached to minimize pollution at every stage of the manufacturing process are not assured of approval.

The same is true of tax incentives. In Germany, for example, a factory manager cannot claim accelerated depreciation on an investment unless 70 per cent of it is devoted to pollution control. So while he can claim his depreciation if he adds to his equipment, say, a simple air cleaner, he will not meet the conditions if he decides to change his entire production techniques.

By sanctioning these conventional solutions, governments are partly to blame for the slow pace of clean technology progress in OECD countries. This does not mean, however, that governments refuse to encourage innovation, nor should it be considered that clean technology is always the best answer. In some cases, end-of-pipe solutions can be equally effective. It must also be recognized that governments have little room for manoeuvre. While they may legislate freely on end-of-pipe equipment, it is much more difficult to enforce production techniques without impinging on industrial secrecy or interfering with the rules of competition.

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### **Encouraging Examples**

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Despite the barriers to the development and spread of clean technologies erected by both the authorities and industry, it is

agreed that new solutions are needed if the environment is to be protected. A number of countries have thus begun to give incentives – in varying degrees of boldness – to promote non-polluting production methods and to develop the relevant technologies. Some, like the United States, leave most things to the play of market forces. But others, notably Denmark, France, Finland and the Netherlands, have adopted a whole range of measures, including financial assistance, information and adjustment of regulations.

Financial arrangements (such as direct or indirect investment subsidies, research and development aid) often appear to be the most favoured form of incentive, but their effectiveness is hotly debated. A study of twenty Finnish industries revealed that they played only a marginal role in a company's decision to invest, although initial aid did provide easier access to other sources of funds.

The total volume of funds allocated to clean technologies in the OECD countries is not known precisely. France is the only country to have supplied figures – in 1983 the French government provided FF 226 million in aid, resulting in an investment of FF 627 million, or 2.4 per cent of total environmental investment.

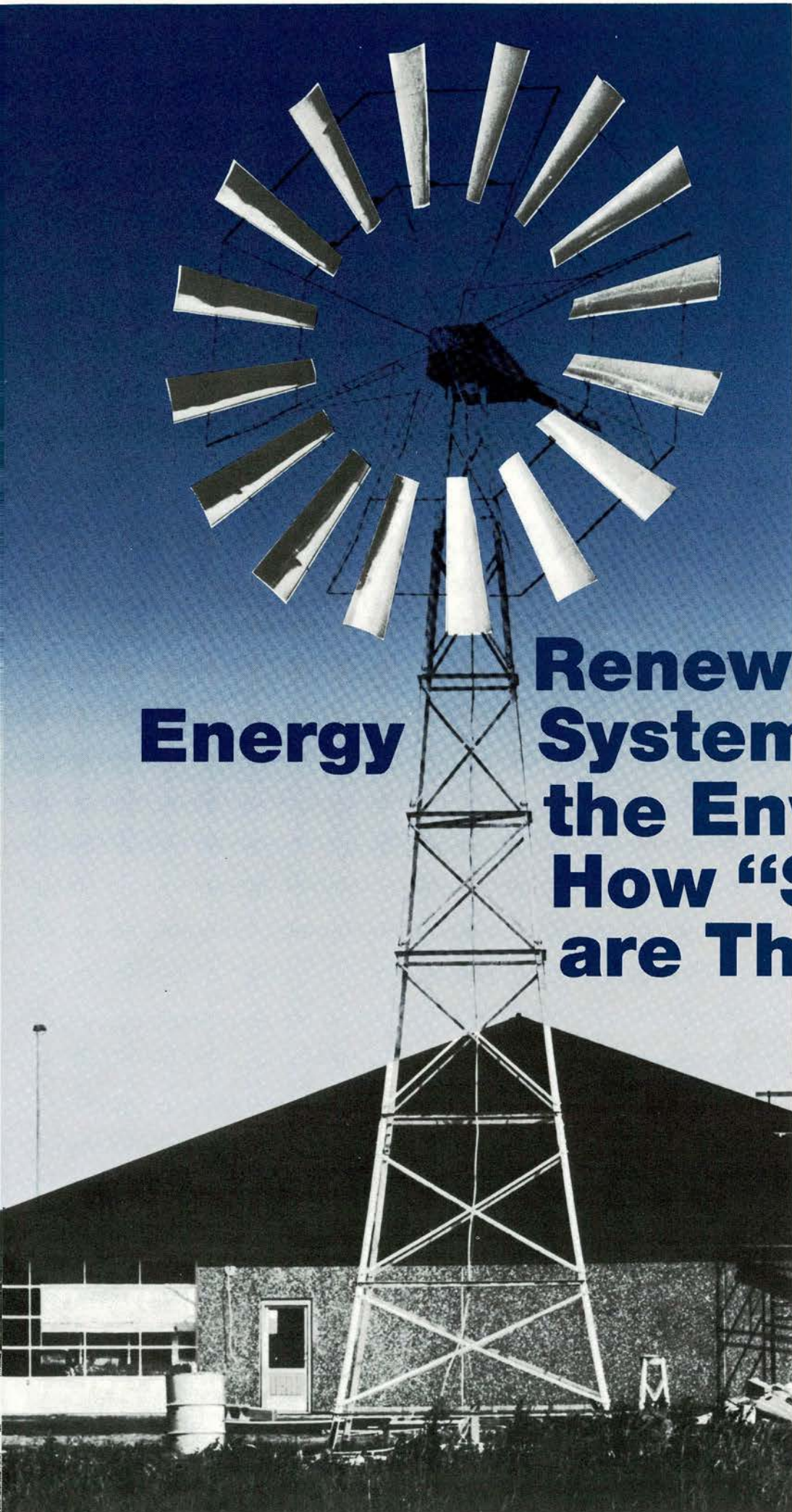
Of course, there is no quick way to making new clean technology appear throughout a country's industry. What is certain, however, is that the spread of clean technology requires greater "technological flexibility" on the part of regulations applying to industry. Ironically, the less the law is concerned with technicalities, the more they facilitate technical change. Choosing a new technology depends on

finding an optimum balance between economic factors and regulatory restrictions; thus, in the end only the manager of a firm can make the final decision to invest.

Clean technology has had its greatest success in countries where the government has succeeded in co-operating with the companies themselves. Company managers often ask the authorities for more time to innovate. One way this has been accomplished is through "progress contracts", which allow the company delays in conforming to environmental regulations and provide it with certain technical or financial assistance. In return, the company agrees to achieve certain results in a fixed period of time. New standards must contain various measures to allow the company time to seek new solutions. Some financial measures, including pollution charges, are a permanent incentive to a company to embrace clean technology – as the company's pollution drops so do its duty payments to the government.

■

Despite the advantage of co-operation with industry, the objectives of national clean technology policies too often reflect only the view of the government services responsible for protecting the environment. By working with industry managers, the authorities might realize that the success of clean production methods depends on more than just environmental policy, but that pollution control is one facet of the country's overall industrial, trade and scientific strategy. To ignore this is to condemn any individual measure aimed at promoting clean technologies before it has a chance of proving effective. ■



# Energy Renewable Systems and the Environment: How “Soft” are They?

*Variously called “alternative” or “soft”, “ambient” or “new”, renewable energy systems at times offer an alternative source of energy to cheap oil, reserves of which are dwindling. And as these soft energy systems neither choke us with sulphur dioxide nor blanket the atmosphere with carbon dioxide build-up, they are said to be “clean”. Nonetheless, according to a recent OECD report, they do sometimes have a significant impact on the environment.<sup>1</sup>*

*Small windmills highlight the best features of renewable energy sources: the harmful effects are small and they are limited to those deriving the direct benefits from their use.*



**M**ost renewable technologies tap, directly or indirectly, energy from the sun.<sup>2</sup> But the definition also embraces systems that harness short-term energy stores (e.g., biomass) and large natural heat stores (geothermal energy). Renewable energy sources would seem to have a bright future, as gains in technology are constantly improving their efficiency, reliability and cost competitiveness. At present, they seem promising more for decentralized uses, such as solar heating, individual photovoltaic and small wind systems, than for large centralized units (box 1). And it is in these local uses that the public finds them attractive, for unlike large power plants their potential harmful effects are much smaller, hence more acceptable. This is true especially as those likely to be affected would be the consumers deriving direct benefits from them.

### Positive or Negative, the Impacts Are Localized

Overall, the impacts of renewable energy sources on the environment are felt locally, as opposed to fossil and nuclear fuel cycles, whose actual or potential effects may have lasting repercussions for

## THE TOP THIRTEEN RENEWABLE ENERGY TECHNOLOGIES

**Well-developed, commercially-available and economically-viable technologies:**

- Solar water and space heating
- Small photovoltaic systems in remote locations
- Small wind systems
- Conventional geothermal technologies
- Tidal systems
- Biomass combustion and biomass liquid and gaseous fuels

**Technologies whose efficiency, reliability and cost-effectiveness still need to be improved:**

- Solar thermal and photovoltaic power systems
- Ground space cooling
- Biomass energy crops
- Medium/large wind power systems
- Wave energy systems
- Ocean thermal energy conversion systems
- Unconventional geothermal systems

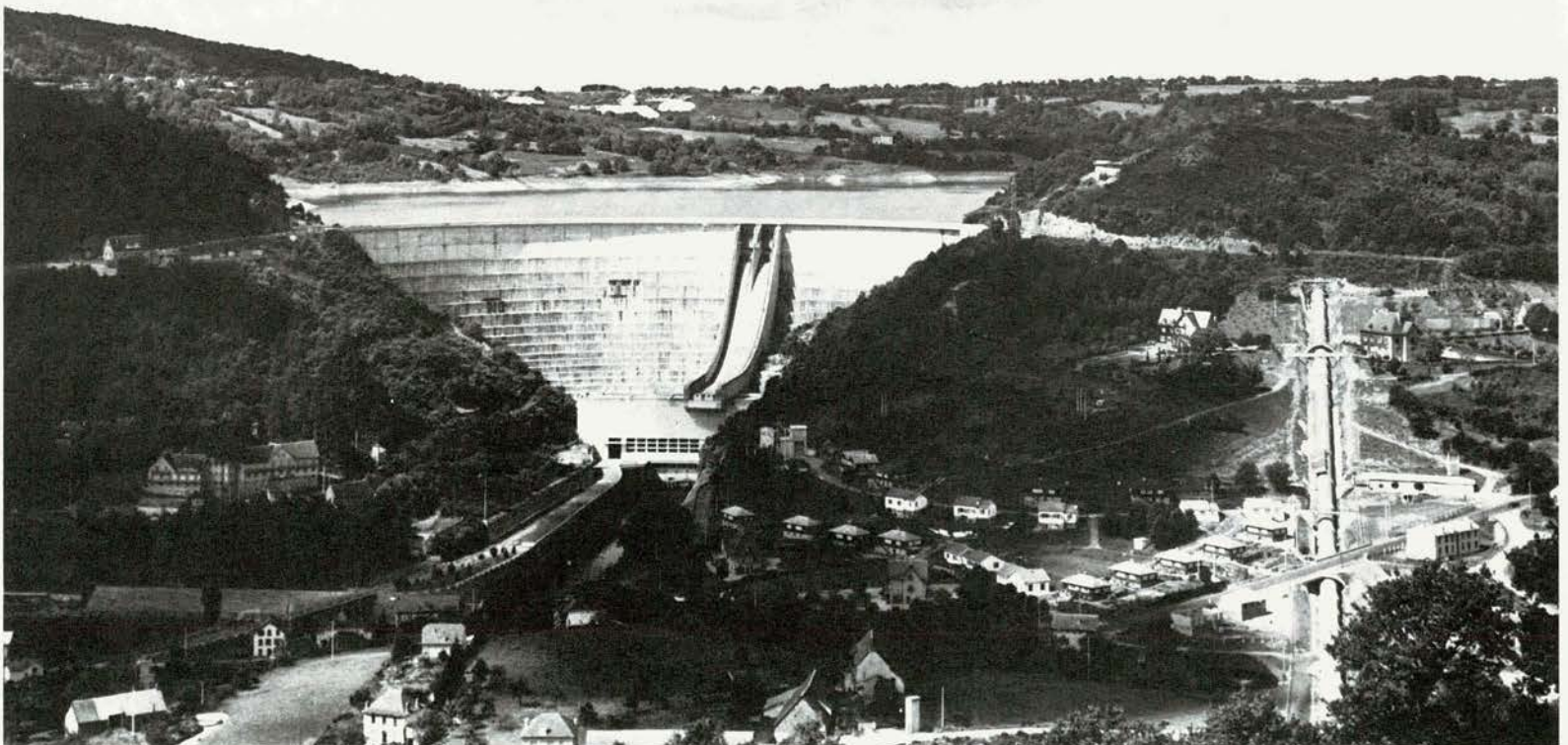
the whole planet. Solar, wind and hydro-technologies produce virtually no airborne pollutants. The public is correct therefore in perceiving them as "clean".

Yet, they too can leave their sometimes lasting imprint on the environment in many ways: material use, land use, waste, noise, visual intrusion, damage to ecosystems, public and occupational health and safety. It is rare, however, to find these effects together (box 2). Solar energy systems, either active or passive, require large quantities of materials compared to the amount of energy they generate and take up large areas of land. Likewise, hydroelectric plants often inundate thousands of hectares of valley to the detriment of plant and animal life and local communities.

Other major problems with alternative energy systems are the disposal of often toxic, working fluids used in solar energy systems and the processing of brines discharged by geothermal plants. The combustion of biomass fuel releases various atmospheric pollutants resembling those produced by the burning fossil fuels. Toxic

1. Environmental Impacts of Renewable Energy Sources and Systems, OECD, Paris, to be published.
2. Tidal power stations harness the energy produced by the rotation of the earth and moon.

*Among the various renewable energy technologies, hydroelectric power dams wreak the most damage on a region's ecosystems.*





## POTENTIAL NEGATIVE IMPACTS AND HAZARDS OF RENEWABLE ENERGY SYSTEMS

### **Passive solar systems:**

- Aesthetic penalties arising from building design
- Use of "problem" materials (UF foam or asbestos – now increasingly being replaced by other materials)

### **Active solar systems:**

- Danger of pollution when replacing cooling fluids
- Fire hazards and accidental discharges of vaporized coolant
- Large land area needed by concentrating collectors for industrial heat generation

### **Thermal-electric solar generation plants:**

- Very large areas of land required, with potential effects on the biotope or local microclimate
- Risk of accidental blindness caused by the reflection of the sun's rays
- Risks from heat transfer fluids (temperature, pressure, toxicity)

### **Photovoltaic systems:**

- Hazards arising during handling and storage of explosive and toxic gases

### **Wind power:**

- Visual intrusion (exposed and windy sites required)
- Noise of rotors (on large-scale units)
- Risk of rotors disintegrating and shedding bits of blades

### **Biomass:**

- Damage to soil quality and changes in ecosystems
- Air pollution and solid waste hazards
- Release of dioxin (e.g., during combustion of urban waste)

### **Geothermal energy:**

- Airborne emissions (particularly of hydrogen sulphides)
- Brine disposal
- Risk of subsidence

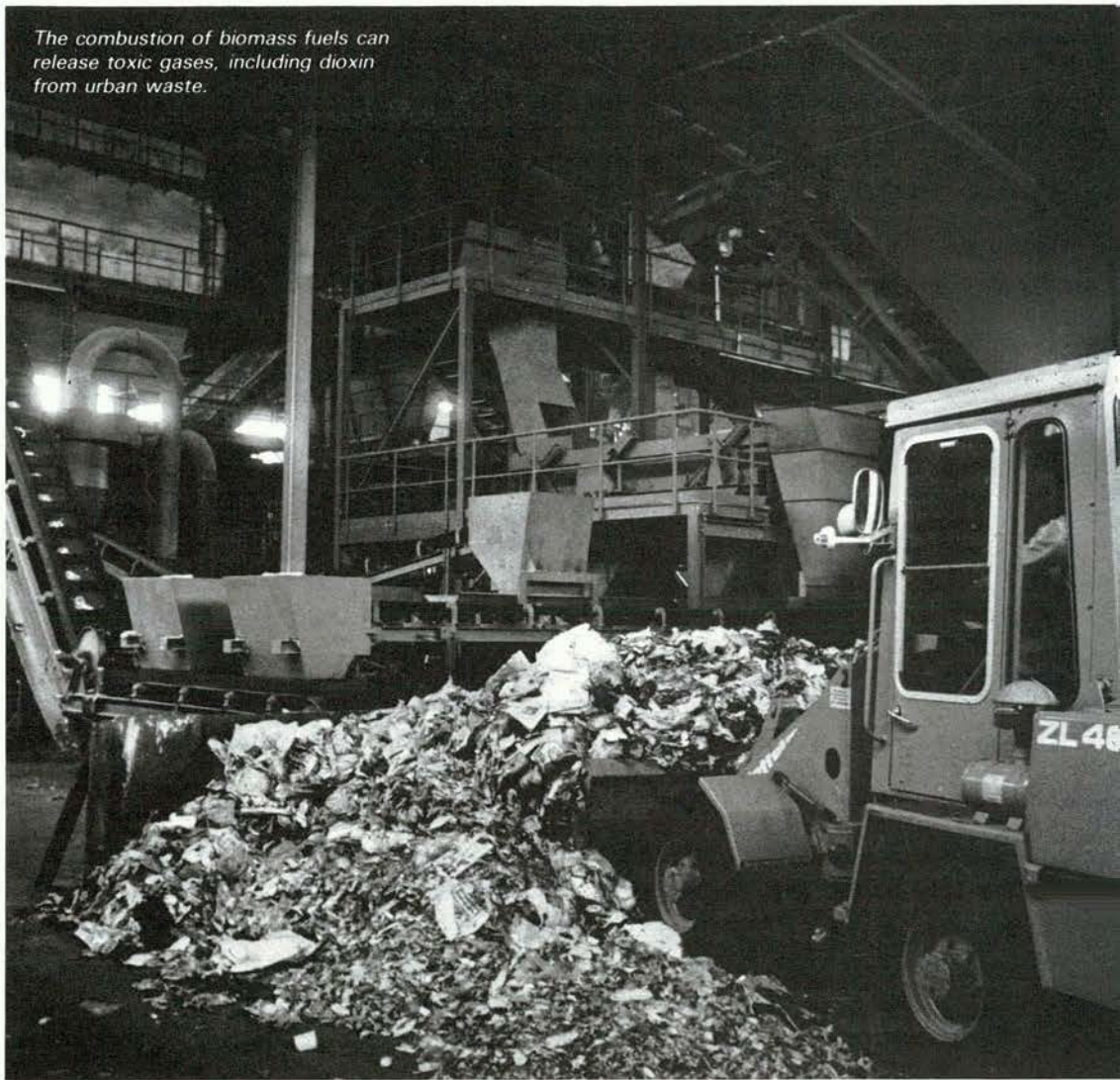
### **Hydroelectric generation:**

- Inundation of farm land and even entire villages
- Disruption of migration and reproduction cycles of certain fish species
- Increased erosion downstream of dams
- Deterioration in the quality of water in reservoirs and downstream
- Risk of dam failures

### **Ocean energy:**

- Possibility of local adverse impacts on fish and aquatic life, navigation and recreation

The combustion of biomass fuels can release toxic gases, including dioxin from urban waste.



gases also are sometimes given off during combustion: dioxin from urban waste and polyaromatic hydrocarbons from wood. But biomass fuel is not the only generator of airborne pollutants; geothermal energy systems often release hydrogen sulphides. Yet, biomass systems are alone in producing solid waste in significant quantities (some of which may, however, be recycled). Among other sources, wind and geothermal energy systems create considerable noise pollution.

The greatest threat to ecosystems comes from hydroelectric dams, which favour pollution, such as eutrophication; disrupt the migration of salmon and other types of fish; and in tropical climates may create a propitious habitat for parasites that transmit diseases dangerous to man, including malaria, bilharziasis, etc. Despite its wide acceptance and long use, hydroelectric power is perhaps the renewable energy system that is currently most controversial with regard to public health and safety. It provides many benefits to a community, but also a number of disadvantages: flood control vs. danger of dam failure; drinking water supply vs. deterioration in the quality of water; development of irrigation leading to greater agricultural output vs. an increase in parasitic diseases and other threats to man.

None of these adverse environmental impacts warrants halting or even systematically slowing down the development of renewable energy sources. Such systems generally do not pose a new and unknown threat to the public or have unavoidable consequences; in this respect, they compare favourably to other energy sources.

It is possible both to control pollution arising during the normal operation of renewable energy systems and to minimize the risk of accident. For example, in biomass production, soil damage or intensive deforestation can be avoided by adopting prudent harvesting methods; in the manufacture of photovoltaic devices, certain safety measures for the handling and storage of dangerous gases can be adopted to protect the health of workers and the public. It is necessary, however, to continue to make effective and affordable improvements to each energy system so as to ensure its commercial success.

Even considering their negative environmental impacts, actual or potential, renewable energy systems still have a major advantage in that they are free from the pollution arising from fossil and nuclear fuels. For this reason alone they merit careful consideration.

# Reforming Telecommunications Policy in OECD Countries

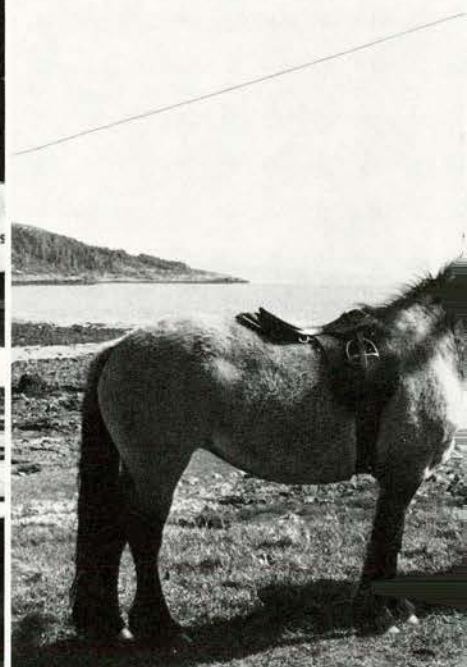
by Dimitri Ypsilanti and Robin Mansell<sup>1</sup>

*In most OECD countries, and especially in Europe, traditional telecommunications monopolies are being restructured and, in some cases, even dismantled. A freer play of market forces is more and more coming to be seen as necessary to speed up the creation of new services taking advantage of the latest advances in technology. Governments are weighing the implications of efficiency arguments, the need for a rationalization of the telecommunication equipment industry, and the necessity to meet specialized business user service requirements while continuing to extend and upgrade universal telephone service. The United States, Japan and the United Kingdom are in the lead of the 'deregulatory' trend. Markets are being opened to the private sector and in some cases foreign service suppliers are being permitted entry into formerly closed markets.*

*In December, a high-level meeting of the OECD's Information, Computer and Communications Policy Committee will discuss the many challenging issues facing government and industry in telecommunications.*



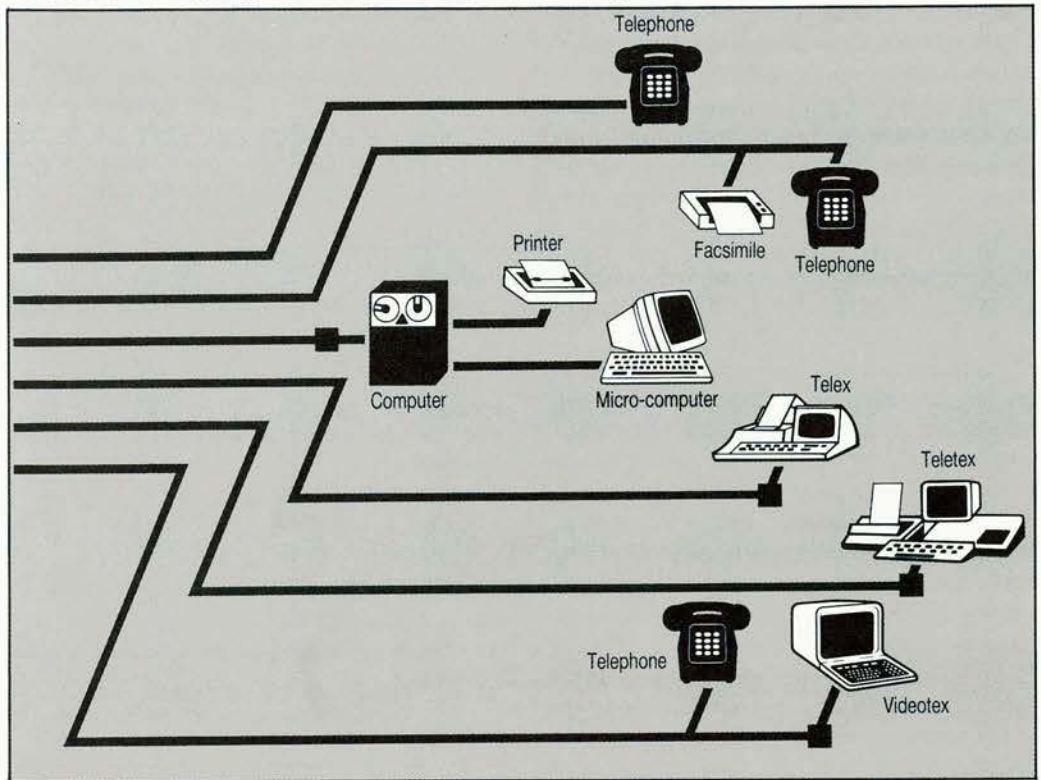
*High-speed data and interactive services are currently available only in economic and political centres. Will this widen the technology gap between regions and between countries?*



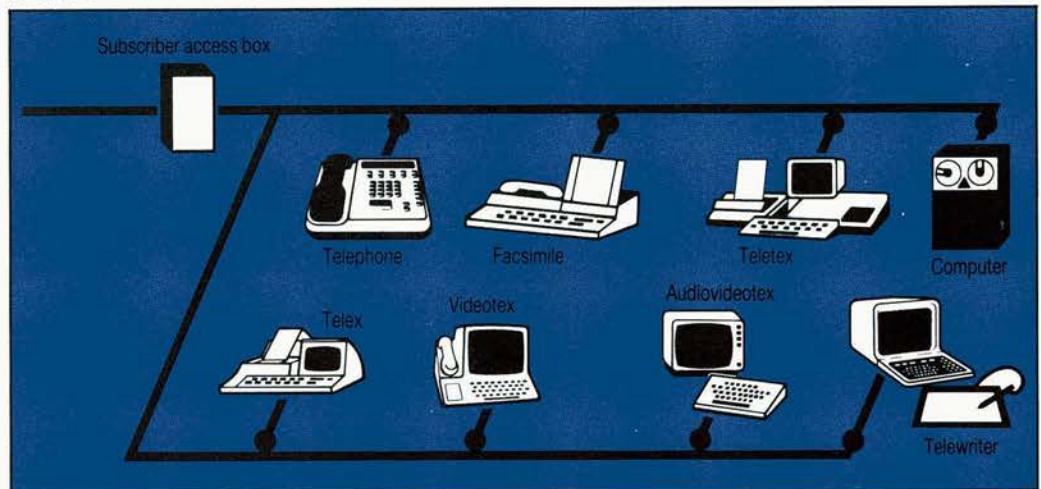
**W**ith one eye on the industry's potentially enormous future revenues and the other on boosting competitiveness within manufacturing and service sectors, policy-makers and businessmen have increasingly questioned the traditional operation and regulation of telecommunication networks and services. Competitive market alternatives to the historical preference for government-sanctioned telecommunications monopolies have emerged in a few countries extending to include all aspects of services, network and equipment supply. Governments are expressing concern over the distortions that may be created in international telecommunication equipment and service markets by the increasing potential for divergence of policy among OECD countries.

In addition to the well-established global telephone and telex networks, the convergence of computer and telecommunication technologies has spawned many new telecommunication network-based services including data, image, text and voice services. Future growth in the OECD area is likely to come in fields such as high-speed data transmission and cellular radio. Teleconferencing, video services, facsimile and electronic mail are expected to grow but demand remains difficult to predict accurately. As new Integrated Services Digital Networks (ISDN) come on-stream the potential scope of services available to

Before the ISDN (Integrated Services Digital Networks) ...



... and after



Source : PTT, Télécommunications, France.



users of public switched networks will be increased considerably. Modernization and upgrading of networks is resulting in enormous capacity increases as well as making possible many specialized services which call for facilities that exceed the capabilities of ordinary telephone and telex networks.

In 1985, OECD countries, with some 318 million telephone main lines installed, accounted for 78 per cent of the world total. OECD investment in telecommunication networks amounted to \$49 billion in 1985, of which the United States accounted for 42 per cent and the EEC for 32 per cent. For the same year, revenues from telecommunication services in the OECD area amounted to \$199 billion, the United States generating 56 per cent of that, the EEC 23 per cent and Japan 10 per cent.

Investment in telecommunication networks is now concentrated on installing digital switching and transmission systems as the basis of ISDN, which will continue to expand their reach throughout the 1990s (table 1).

As information processing and data transmission services take on an ever more international dimension, the need to establish the conditions of access for an international user community as well as for service suppliers becomes more crucial. The emergence of a 'global village', comprised mainly of business users, is difficult in the face of different national market structures and regulations.

Three major issues are facing OECD governments today: how best to organize

1. OECD's Directorate for Science, Technology and Industry.

their telecommunication industries so as to be in a competitive position to take advantage of future market opportunities; the extent to which computer and other information service firms will be allowed to participate actively in new service markets; and how telecommunications administrations can continue to meet their mandates to provide universal service in a competitive market environment.

## Assessing Performance

It is extremely difficult to evaluate relative performance by telecommunications service providers. Such international comparisons, though useful in indicating broad differences (table 2) and relative shifts over time, need to be undertaken with caution. Differences in market structures, pricing and accounting procedures, subcontracting practices and employment policies can bias these comparisons.

Until 1984, the provision of telecommunication services in most OECD countries was organized as a monopoly, whether government-owned or privately-owned and government-regulated. Historically, there were two reasons for establishing this kind of structure: first, it was argued that telecommunication services were a natural monopoly – cost factors made it more efficient for one supplier to serve the market; second, telecommunication services were treated as a public service that should be widely available at reasonable cost – universal service could be achieved only by a single supplier rather than a number of competing firms.

## 1. DEGREE OF DIGITALIZATION OF THE TELEPHONE NETWORK BY 1990<sup>1</sup>

	Subscribers (main lines) millions	Degree of digitalization %		
		Transmission	Switching	
			local	long-distance
Belgium	4.0	50	29	75
Denmark	3.0	85	23	40
France	27.0	70	70	75
Germany	28.6	50	3	22
Greece	4.5	15	15	25
Ireland	1.2	70	65	85
Italy	21.7	45	25	36
Luxembourg	0.2	35	8	10
Netherlands	6.3	95	35	15
Portugal	19.5	70	20	30
Spain	12.2	47	5	45
United Kingdom	20.0	100	42	90

1. According to current planning by the network operators.

Source: European Conference of Postal and Telecommunications Administrations (CEPT) and Commission of the European Community.

The validity of these arguments, against a background of rapid technological change, a proliferation of new telecommunication services and the potential of digital technology, is now being called into question. Furthermore, at least until the early 1970s, telecommunication administrations in many OECD countries had been criticized for the slow expansion of telephone networks in response to demand and the build-up of lengthy waiting lists. In some

cases they were slow to introduce innovative specialized services. Governments themselves may have been partly responsible for such a situation insofar as they hampered efforts by telecommunications administrations to obtain sufficient investment funds. Over the past 10 to 15 years, however, investment has been stepped up and voice telephone installations have begun to approach saturation level in many OECD countries (chart). But there remain several countries, as well as regions within countries, that lag behind in telephone penetration.

Investment in telecommunications reached a peak in most OECD countries in the early 1980s following the expansion of the 1970s. Investment has again begun to increase over the last several years and is now aimed at modernizing networks (replacing analogue systems by digital ones) to achieve greater operational efficiency in the supply of existing and new services. Relatively slow growth in the present main source of revenues (voice communications) is also characteristic of the 1980s. This is one reason why many telecommunication service suppliers are seeking to capture new service areas where revenue growth is stronger (data transmission, facsimile, mobile cellular telephony, 'value-added' services and so on).

## Changing Objectives and New Regulations

The adjustment process in telecommunication services has only begun, and it is by no means certain that European countries

## 2. COMPARATIVE DATA ON COMMON CARRIERS

in constant US\$ at 1980 prices and exchange rates

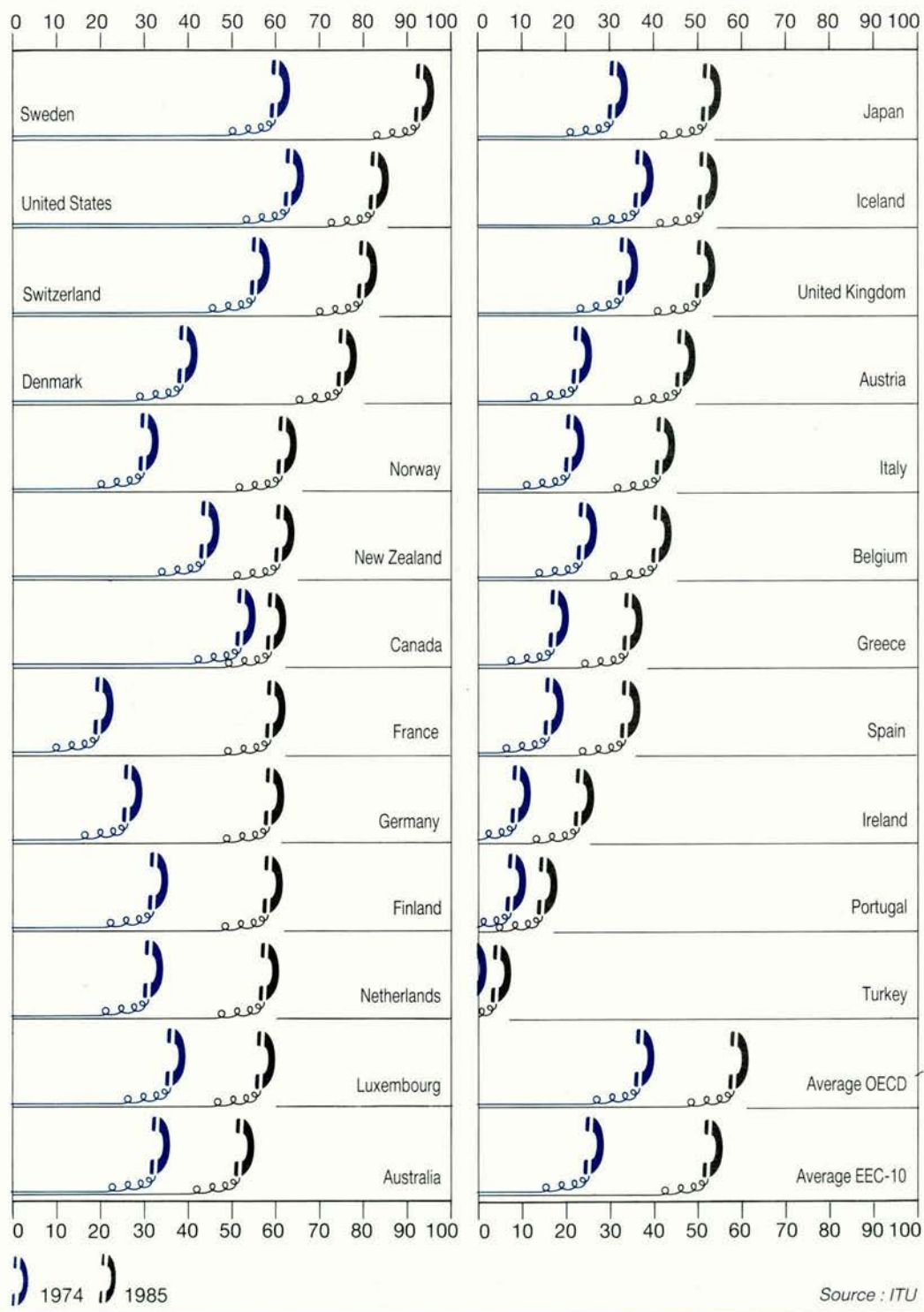
	Revenue per Main Line		Operational Expenditure per Main Line		Main Lines per Employee		Per Capita Investment 3-Year Average		Index of Network Sizes <sup>1</sup> for 1985 (US = 100)
	1974	1985	1974	1985	1974	1985	1975-77	1983-85	
Australia	544	568	236	264	38	69	76	75	5.4
Belgium	487	530	316	234	60	111	60	59	2.6
Canada	473	561	231	336	89	125	85	73	10.7
France	1 018	633	559	273	52	138	85	83	19.7
Germany	1 028	620	475	158	64	120	59	104	21.9
Italy	441	420	392	225	93	158	57	59	14.9
Japan	370 <sup>2</sup>	443	98	93	93 <sup>2</sup>	141	58	56	38.8
Netherlands	621	462	319	238	123	202	49	40	5.0
Spain	409	370	104	88	67	130	55	39	8.0
Sweden	425	477	274	323	107	125	37	93	4.5
Switzerland	706	741	406	337	147	179	113	118	2.8
United Kingdom	505 <sup>2</sup>	612	—	427	52 <sup>2</sup>	89	53	49	17.9
United States	587	736	281	435	89	169	71	67	100.0

1. Based on Main Lines.

2. 1975 data.

Source: ITU/OECD

## TELEPHONE SETS PER 100 INHABITANTS



will follow models being implemented in the United States, Japan and the United Kingdom. The choice between monopoly and competitive market supply of telecommunication services rests not only on efficiency criteria but also on public service objectives and national control over telecommunication structures.

There is a range of possible solutions. Competitive markets and minimum regulatory control do not guarantee perfect competition and there are both economic and social benefits associated with monopoly structures that, in some cases, may outweigh the advantages of imperfectly competitive markets. At the same time, it is

possible for social policy objectives, such as the provision of universal service, to be achieved in a competitive climate and to fail under public ownership. Several OECD countries have separated telecommunication services from postal services as a first step in restructuring. In this way, cross-subsidies between services can be monitored more easily and the efficiency of both services can be maximized.

### U.S. Restructuring Begins Early

The liberalization process began in the 1960s in the United States, with a competitive public network license (1969), followed

by a general opening of the market to specialized common carriers (1971) and a 1972 "open skies" policy allowing satellite systems to compete with terrestrial microwave facilities. The major transformation occurred at the beginning of 1984 with the implementation of a 1982 court decision [the Modified Final Judgement] which required AT&T to divest itself of its local operating companies.

The resulting market structure consists of: competitive long-distance services; numerous local exchange carriers enjoying a monopoly situation; and telecommunication network-based services supplied by competitive 'enhanced service' companies. The divested Bell local operating companies are required to provide 'equal access' to other carriers and presently remain subject to restrictions preventing them from offering certain services.

The United States started from a unique position in the OECD area, with telecommunication services supplied by a franchised private monopoly supervised by an independent regulatory agency (Federal Communication Commission) but also subject to anti-trust laws. Indeed, the introduction of competition in telecommunication services has been partly achieved by court decisions overruling regulatory decisions which often were found to be unresponsive to the need for far-reaching structural change.

### Competition Introduced in Japan

The old structure under which local and long-distance domestic services were provided exclusively by Nippon Telegraph and Telephone (NTT) and international services by Kokusai Denshi Denna (KDD) has been replaced by a competitive system. NTT has been privatized and facilities and service competition has been introduced into both domestic and international markets. Foreign firms are limited to one-third participation in joint ventures with domestic network suppliers, although there are no restrictions on foreign competitors providing services using leased transmission supplies.

Competition was introduced for telecommunication network-based services in 1982 by allowing sharing of leased lines for data processing and by permitting message-switching services. NTT's exclusive right to authorize the supply of terminal equipment was removed and responsibility was given to an independent body. Users now are entitled to attach any equipment to public networks as long as it conforms to certain standards. NTT still is required to provide universal service and it may be entitled to charge access fees to the growing number of carriers that use its network to reach local residential and business customers. ➤

### **The U.K. Competitive Model**

The privatization of British Telecom (BT) in 1984 put 50.2 per cent of the corporation's shares in public hands but left the Government as the major shareholder. The right to compete with BT in facilities was given to one company, Mercury, which is obliged by the terms of its license to build a basic network linking the major cities. It is not required, however, to provide universal service. The Government has undertaken not to license another network operator until at least 1990.

BT is required by its licence to provide universal service and to extend service to rural subscribers. The common carriers are now subject to the regulatory oversight of the Office of Telecommunications (OfTel). Significant liberalization has occurred in licensing of value-added and data services. Licences are issued by the Department of Trade and Industry, while responsibility for certifying equipment is assigned to another independent agency, the British Approvals Board for Telecommunications.

Further reforms in 1987 have removed many restrictions on resale and sharing of private leased circuits connected to public switched networks – with the exception of voice and telex services. This issue is due to be reconsidered in 1989.

### **Potential for Change Elsewhere**

In other OECD countries, change is being considered primarily to introduce varying degrees of competition in services and terminal equipment supply. In France, the Direction Générale des Télécommunications (DGT) has set up subsidiaries to operate new services and, although no licenses have been awarded yet, competition is expected in telecommunication network-based services. A new competition law applicable to telecommunications is to be introduced in the near future.

The Deutsche Bundespost (DBP) in Germany retains a significant degree of monopoly control over many service areas. Although no further formal changes are likely before 1989, steps have been taken toward new pricing schemes in preparation for future service competition. In addition, DBP has lost its monopoly over modems and other types of equipment. A Government Commission for Telecommunications is in the process of making recommendations for changing the German telecommunications structure.

In Australia, policy-makers are considering a draft proposal on Value Added Services Regulatory Policy; in Canada, consultations are underway on the possible development of a national competition policy framework for telecommunications; in Belgium, recommendations in 1986 by a government-appointed commission are under scrutiny; and in Denmark, the terminal market is being opened to full com-



*Optical fibre cables are expanding network capacity but require large-scale investment.*

petition and a neutral-type approval body is being set up. In Italy, it is envisaged to consolidate the existing separate four major service providers into two operating under company law. The Netherlands has decided to separate its postal and telecommunications services and to open telecommunication network-based service markets and equipment markets. Spain has recently submitted a draft law on regulation of telecommunications to Parliament and Switzerland also is in the process of redrafting its telecommunications act.

Telecommunications administrations have been criticized by some for thwarting competition, pending the start-up of ISDN; still, in some cases, they are becoming more responsive to user needs. In most OECD countries the debate is continuing over how to respond to a changing international environment and new possibilities created by software technology. There is widespread support for competition in network-based services, but some telecommunications administrations are concerned not only to ensure a foothold in these markets but also to deliver these services

to a broad spectrum of users – beyond the scope likely under competition.

### **The Future of Universal Service**

Many of the arguments for and against competition in telecommunication services are not centrally concerned with whether greater efficiency of operation can be achieved under competitive or monopoly supply. The main concerns are what areas should be opened to competition, to what extent, and with what impact on existing service providers. The net benefits are harder to evaluate than the immediate costs – especially in the absence of market experience.

Existing telecommunication service rate structures have confused the picture. There are considerable cross-subsidies between different types of service offerings and little evidence is available for independent analysis on the relationship between service prices and cost. Traditionally local calls have been priced considerably lower than long-distance calls but the relative ratio of

prices of these two services is becoming increasingly difficult to maintain. Many administrations are under pressure to reduce long-distance prices as a result of rate restructuring and long-distance competition in other countries.

In most countries local service competition has been ruled out, in part because local service is seen as the mainstay of universal service and because the technological alternatives have not yet become clear substitutes for existing local service plant and equipment. A central policy question facing telecommunication administrations is the extent to which it is possible to allow competition in the provision of long distance and other services without jeopardizing revenue growth and, therefore, the ability to provide adequate universal service. There is some evidence that local services can be run profitably, depending on the type of competition that is permitted and the conditions of access by competitors to local networks.

The results of deregulation depend very much upon how it is implemented. Local telephone charges have risen in the United States since the divestiture of AT&T. There is a risk that if the prices for local telephone service are permitted to rise, some residential users may be discouraged from subscribing to the telephone service — an obvious conflict with the goal of universal service. However, there need not be a contradiction between a commitment to universal telephone service and the introduction of a measure of competition in certain areas. There are alternative policies in a competitive environment which can be used to maintain low cost universal services, i.e., direct subsidies and access charges for use of local networks, etc.



International consensus on how to manage the transition to new telecommunication services, new suppliers and liberalized equipment markets is becoming increasingly difficult to achieve. Shifting market boundaries, stimulated by the growing complexity of network and service provisioning and the attractiveness of international markets to firms who see telecommunications as integral to competitive strategies, complicate the task of policy making. There is widespread agreement that if maximum advantage is to be taken of the future telecommunications global network and services new ground rules will need to be developed. These should contribute to increasing possibilities for international trade in telecommunication and information services and equipment, to creating an environment which is responsive to diverse user needs, and to helping overcome disparities in telecommunications development regionally within countries, in the OECD area and between OECD and developing countries. ■

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# Country Problems and Strategies

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## Germany

**T**here are two outstanding imbalances in the German economy that policy-makers need to tackle. One is the stubbornly high rate of unemployment, and the other is the huge balance-of-payments surplus, which reached a record level in 1986.

The trend rate of unemployment has been steadily rising since the early 1970s, and in the latest business upswing it continued to increase for about three years, peaking in mid-1985 at 9½ per cent. While there was a modest decline during 1986, the rate was still at 8¾ per cent in the first half of 1987. That was over eight times higher than the rate during the first oil price hike in 1973-74 and three times higher than prior to the second oil shock (1979-80).

On the supply side, the labour force has grown rather unevenly over the past 15 years. It contracted by 250,000 between 1973 and 1979 but then expanded by over one million from 1979 to 1986. Even so, the pressure from labour supply growth has been comparatively moderate by international standards.

The root of the problem appears to lie in insufficient job creation, therefore, with recruitment falling off sharply from the mid-1970s onwards. Employment has increased less in the German private sector since 1965 than in any other OECD country, and that can be traced to relatively weak output growth and to cost incentives to substitute capital for labour. In the 10 years to 1983, employment in manufacturing fell almost continuously and has only recovered a little since.

From the early 1970s, when the pool of labour potentially available for service employment was higher than at any time before, net job creation slowed down markedly in both the private and public

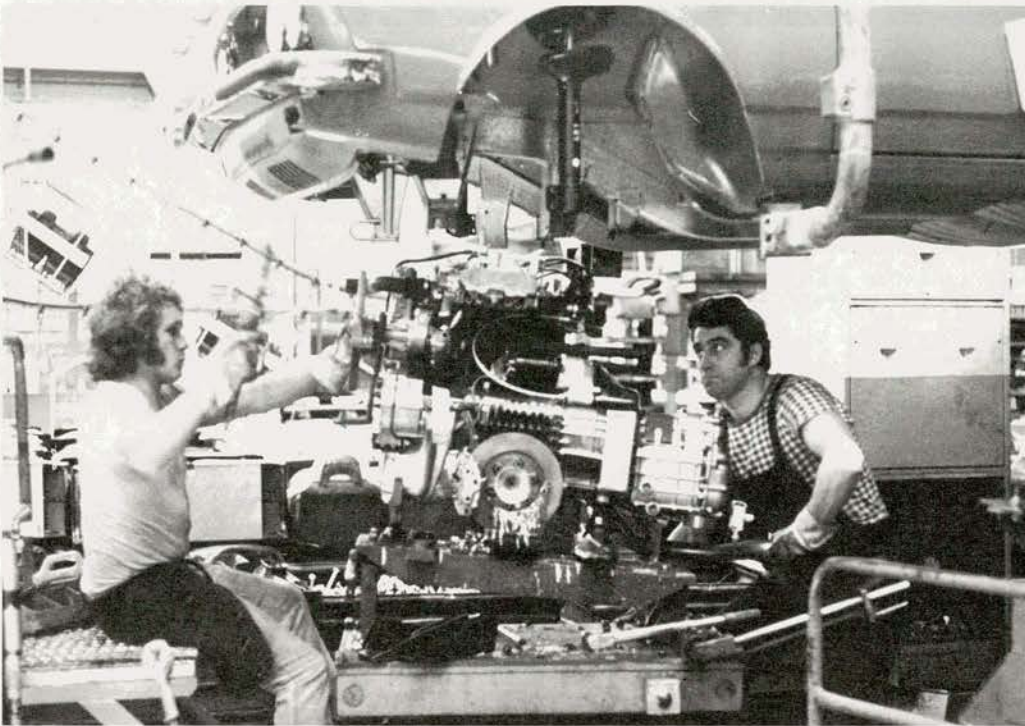
sectors, so that between 1973 and 1985 the unabsorbed labour supply expanded by more than two million. Only 40 per cent of the surplus labour potentially available for service jobs was absorbed, demonstrating that Germany has one of the least buoyant service sectors (as regards employment creation at least) amongst developed countries. One possible explanation might be that displaced industrial workers found working conditions and rates of pay unattractive in services.

Wage growth has also been an important factor behind the rise in unemployment since 1973, with real wages failing to adapt quickly to the terms-of-trade adjusted decline in labour productivity. Since 1982, however, the real wage gap has been narrowed if not reversed and corporate profitability has improved.

No easy solution to the high rate of unemployment is in sight since a major part of it is structural, in the sense that it cannot be eliminated in the short run by raising the level of aggregate demand. Assessment of the capacity utilization rate of German industry in 1986 shows that the economy was operated at only 3 to 4 per cent below its normal capacity use level. Allowing for some cyclical rise in productivity, this suggests that the current level of employment is only 2 to 3 per cent below the full employment capacity of the economy.

The government's policy for dealing with unemployment rests on two basic principles — not to intervene in the price/wage determination process and not to expand the relative size of the public sector, thereby creating a favourable business climate that should encourage capacity expansion and job creation.

The external imbalance is one of excess rather than deficiency and is more a problem for Germany's trading partners than for the



German nation. It has had a comfortable current balance-of-payments surplus for most of the past 30 years, with particularly large surpluses being recorded during the recessions of 1967-68 and 1974 and in the three years following the second oil shock (1979-81). Manufacturing is the dominant foreign exchange earner, having developed to compensate for the country's paucity of natural resources. In contrast to its substantial trade surplus, Germany customarily runs a big invisibles deficit, mainly reflecting its growing imbalance in tourism. The trade surplus component is thus the structural counterpart of the services deficit.

Germany's current account swung into deficit following the second oil shock (unlike the first one), as a result of a lack of competitiveness as well as of the sharp jump in its energy import bill. By 1982, however, the current account was back in surplus again, following a drop in domestic demand and a decline in the exchange rate. From then on, the net foreign balance steadily increased its contribution to GNP growth. With the decline in oil prices in 1986, which is estimated to have boosted the trade surplus by the equivalent of 1½ per cent of GNP, the current account surplus widened to 4 per cent of GNP last year.

Trade has become more important for the German economy in both directions, with the volume share of imports having risen from an average of about 19 per cent of GNP in the late 1960s to more than 25 per cent at the end of the 1970s. The process of import penetration stagnated in the first half of the 1980s, though, because the Deutschemerk was undervalued, but the weakness of the dollar in the past two years has sent the real exchange rate of the German currency back up to its 1973 level. Movements in the real exchange rate have had only a limited impact on trade, since changes in competitiveness resulting from exchange rate fluctuations have partly been absorbed by profit margins. All in all, Germany has suffered a moderate decline in its share of world markets since the early 1970s.

Current external surpluses represent an outflow of domestic savings. The sharp swing in Germany's balance of payments from a deficit at the beginning of the 1980s to a record surplus in 1986 was reflected in national savings and investment levels that initially converged and then began to diverge. The investment ratio declined from 21.5 per cent of GNP in 1981 to 19.5 per cent in 1986, while the savings ratio

*Germany boasts a substantial trade surplus, but runs a big invisibles deficit, largely reflecting its growing imbalance in tourism.*



increased from 20.2 per cent to 23.3 per cent of GNP over the same period. These figures suggest that the German problem of excessively high current account surpluses is basically related to insufficient capital formation at home.

A simultaneous reduction in unemployment and the current external surplus calls for a relative shift of resources from the exporting and import-competing sectors of the economy towards the more domestically oriented sectors. This in turn requires a rise in domestic demand relative to foreign demand. Policy-makers thus have

the choice of stimulating domestic demand in the hope that this will lead to higher output and increased imports, or of pushing the exchange rate upwards while, at the same time, bringing about a relative fall in the prices of labour-intensive products so as to increase the labour content per unit of output. The latter seems an impractical option, while the former could be brought about by fiscal policy, so long as higher demand engenders increased investment in new output and employment capacity. ■

Source: OECD Economic Surveys – Germany.

public expenditure rose faster than revenue despite higher taxation. Growing indebtedness and higher interest rates lead to a steady rise in debt-servicing costs and increased the pressure on the deficit.

The slowdown in economic activity was accompanied by growing labour market rigidity. Wage differentials narrowed across industries and income groups. Wages rose closely in line with prices, resulting in a loss of competitiveness and a drop in profits. Employment in industry and agriculture declined rapidly throughout the period. Some estimates suggest one-third of unemployment is attributable to the combined increase of public spending and wages in the 1970s and early 1980s.

In 1982, the new government changed the direction of policy with the objective of improving public sector finances, increasing labour-market flexibility and reducing the dependence of the business sector on the government through the replacement of sector-specific industrial policies by a more market-oriented approach. ▶

## The Netherlands

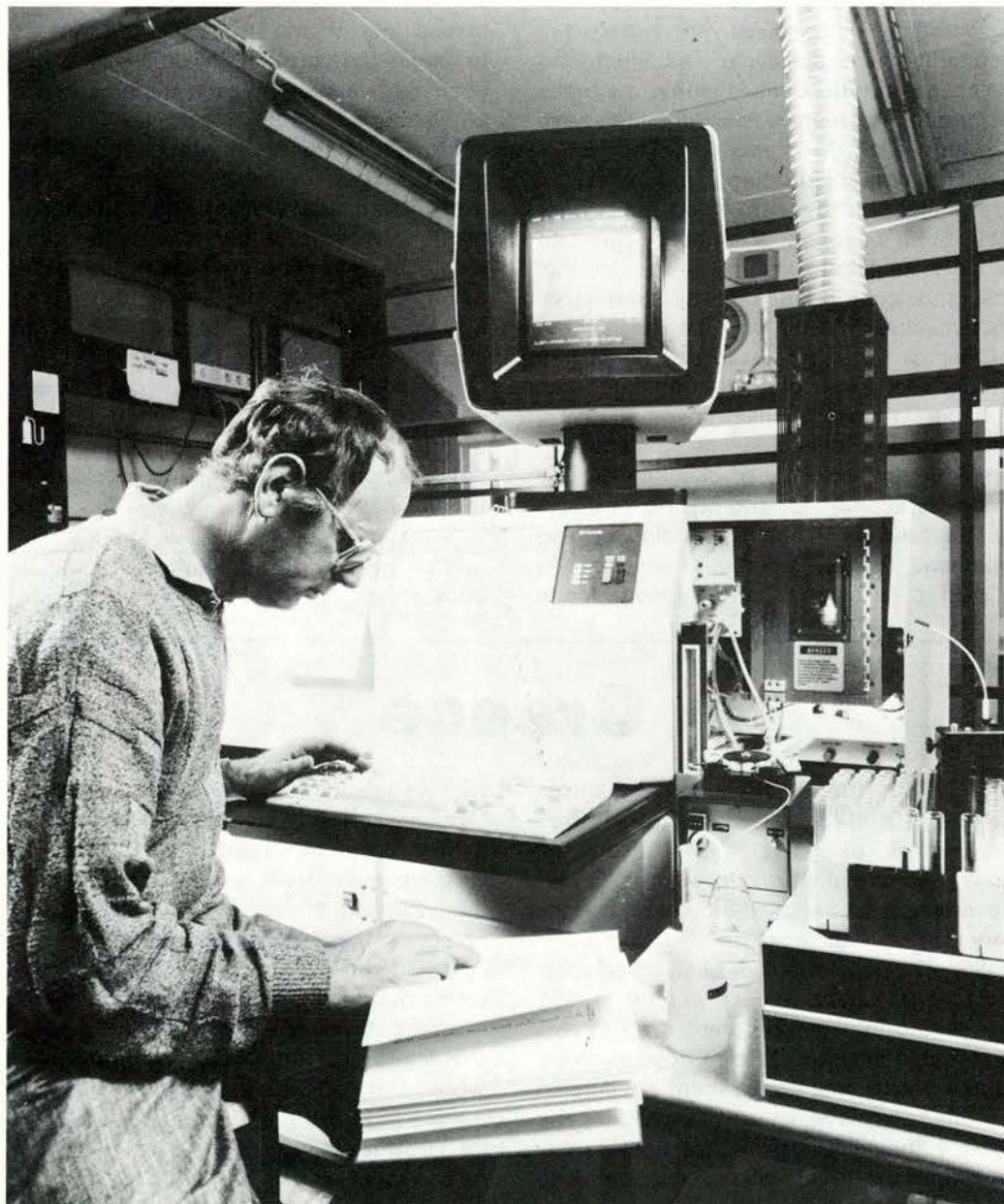
In many respects, the new strategy adopted by the authorities in 1982 has had a considerable measure of success: growth of output, investment and employment have all increased, the jobless rate has declined, the central government deficit has been substantially cut back and the inflation rate is one of the lowest in the OECD area. Furthermore, with domestic demand beginning to take over from exports, growth was more soundly based in 1986.

However, these favourable developments cannot mask the large imbalances that remain. At around 13 per cent of the labour force in 1986, the unemployment rate is still one of the highest in Europe. The central government deficit is in excess of 6 per cent of national income, resulting in an increase in public debt which has now reached a level equivalent to 70 per cent of GNP. In contrast, the private sector has maintained high levels of savings and a low rate of capital accumulation, and this has been reflected in a still large current external surplus.

These imbalances date back to the 1970s. With a very open economy and only small market shares in oil-producing countries, the Netherlands has suffered more than others from the slowdown in world trade after the first oil shock in 1973. And its energy-intensive industry has suffered from the rise in oil prices and competition from developing countries.

The economic policies pursued at the time also contributed to the imbalances. With a rapid increase in transfers to

households (up by 10 per cent of GDP between 1972 and 1982), accompanied by rising subsidies to the business sector,



*The Dutch Government has taken steps to support R&D, especially in small and medium-sized firms.*

These decisions were reflected in expenditure cuts on a range of government programmes, civil service salaries and social benefits (unemployment, disability, health). At the same time, financial resources were redirected towards areas likely to improve profitability and the business environment. Furthermore, the corporate tax rate was lowered from 48 to 42 per cent.

In the labour market, the government stopped intervening in collective bargaining and the social partners agreed to a programme of wage moderation, a reduction in working hours, an extension of part-time employment and the recruitment of young people. Wages rose less rapidly than productivity until 1985, enabling profitability to return to healthier levels.

Industrial policy, which in the 1970s had been very defensive and concentrated mainly on sectors in difficulty, has been redirected, selective investment subsidies have been modified and measures have been introduced to support R&D, especially in small and medium-sized firms.

The considerable success of the policy shift since 1982 has, nevertheless, left fundamental imbalances preventing the economy from achieving sustained and balanced growth. Consequently, the focus of the government's new medium-term strategy is on their reduction. The 1987-1990 budgetary programme is based on four major objectives: to lower the budget deficit to 5½ per cent of national income, to avoid increases in income tax and social insurance contributions, to reduce the jobless number by 200,000 (i.e., by almost 30 per cent), and to stabilize the overall purchasing power of social transfers.

That implies further spending cuts, including a reduction in government employment, stability of civil service pay and less support for the private business sector. Savings on health spending are also planned. Finally, additional revenue is expected as a result of increased efforts

against social security fraud and tax evasion and avoidance.

Expenditure on education and employment will, on the other hand, be increased in order to provide the training and the creation of new jobs needed for the young and long-term unemployed. These various measures, including the Youth Work Guarantee Plan, subsidies for the long-term unemployed and training programmes, should affect 110,000 of those currently out of work.

However, achieving the set targets may be more difficult than initially expected. In light of the major revaluation of the guilder since the programme was presented, the OECD forecasts to 1988 point to a slower growth in output as export performance weakens, negatively affecting public spending and revenue. Further, government assumptions regarding international interest rates and oil prices may have been too optimistic. Additional public spending cuts may be necessary to reach the budget-deficit objectives.

With the room for manoeuvre on demand-management policy virtually nonexistent, emphasis should continue to be placed on removing structural impediments to longer-term growth. While progress has been made in recent years, the functioning of labour markets could be further improved. In the short run, more flexible nominal wages in the face of the appreciation of the guilder would be desirable. Over the longer term, labour market flexibility would be enhanced by reducing the distorting effects of the tax and transfer system and by increasing the level of education and skills in the economy. The budgetary position of the government would be improved and market impediments reduced by progressively lowering direct support for housing and subsidies to the business sector. ■

Source: OECD Economic Surveys – Netherlands.

## Greece

In 1985, the Greek authorities introduced a two-year Stabilization Programme, designed to shift economic policy from expansion to restraint. The government has applied increased budgetary rigour and a restrictive monetary policy. The population has been called upon to take substantial cuts in pay levels, translating into a 5 per cent drop in real disposable income. Despite opposition by labour unions, the government appears to be able to achieve most of its goals by the end of the year. The public sector borrowing requirement will probably be close to 11 per cent of GNP (10 per cent forecast),

with an inflation rate of 12 per cent (10 per cent forecast) and a current external deficit of 3 per cent (on target). The Stabilization Programme will have succeeded in reversing the worrying trends of 1979-1985 and improving the business climate.

Up to the second oil shock, manufacturing output grew at the remarkable rate of about 10 per cent a year, or nearly twice the figure for the OECD countries as a whole. But, in 1985, that figure dropped to a mere 1 per cent, and its share of GDP to its 1968 level.

The rapid growth of public expenditure – in goods and services and in wages,



Farmers – who make up 25 per cent of the Greek labour force – are virtually tax-exempt.

transfers and subsidies – should have stimulated private sector growth, especially as an increasing proportion of spending was not financed by taxes. But for a number of reasons, the manufacturing sector has failed to adapt. Dominated by small, traditional family businesses, the sector suffers from a variety of handicaps, including too few competent managers, inadequate funding and a lack of research and development facilities.

Yet another obstacle to stimulating the private sector is the mechanics of the local financial system, which, at the expense of new businesses, has tended in the past to favour existing enterprises, regardless of their economic position and survival chances. Add to this the claims made by the public sector on overall resources and the funds earmarked for sheltered activities (agriculture etc.) and little room is left for funding the “competitive” economy.

Labour market rigidities must also share responsibility for the country's woes. The difficulty in laying off workers, even in ailing enterprises, has hastened industrial decline. Incomes policy has encouraged major wage increases at a time of shrinking



productivity and new legislation to contain prices – leading to diminishing profits and increased borrowing that has burdened operating results with heavy costs.

There are also socio-political factors inhibiting private sector growth. Sizeable foreign exchange inflows from Greeks living abroad, large EEC payments and fast-growing government transfers to households have apparently created a climate antagonistic to work and favourable to consumption.

The public sector's heavy expenditure growth in a period of stagflation – to a level of 49 per cent of GNP in 1985 – has also created imbalances. Receipts have failed to grow with expenditures, the deficit has widened and other financial costs have swelled since 1979. By 1985, the net public sector debt had reached some 80 per cent of GNP, one of the highest ratios in the OECD area. Even more troubling than its size was its rate of growth.

The inadequacy of government resources is due to the fact that taxes, both direct and indirect, draw on a relatively small number of individuals and activities. Farmers (25 per cent of the labour force), who receive ample

transfers and subsidies, are almost tax-exempt. In addition, tax evasion and avoidance are endemic.

**T**urkey's economic indicators in 1986 show – in spite of a deteriorating current account – the progress of adjustment and stabilization policies taken up in recent years. Growth stands at 8 per cent (the highest among OECD Member countries), consumption and investment are buoyant, inflation has fallen (from 45 per cent to around 30 per cent), employment has risen (up more than 2 per cent) and productivity and international competitiveness have been enhanced.

Among the policies that have helped achieve these results is the adjustment of the public sector. Poorly managed and inadequately structured, this sector has long been prey to a host of problems: widespread and lightly penalized tax avoidance and evasion; relatively heavy taxa-

The social security system has also shown a widening deficit since 1980, mainly because of the growing number of pensioners and increased pension levels.

The economic and financial situation of Public Corporations and Enterprises (PCEs) deteriorated markedly during the first half of the 1980s. To the causes already encountered in private enterprises – managerial incompetence, expensive labour and lack of progressive drive – must be added the particularly heavy government interference in pricing policies. The future of PCEs has been endangered by redistributive and counter-inflationary policies that have kept some public services at an inadequately low level. In addition, infrastructure modernization has been held up by lack of investments.

In the future, despite the Stabilization Programme, important imbalances appear likely to remain. To make lasting changes in the economy, major structural reforms are needed. For instance, taxation must be made more comprehensive and equitable and tax collection improved. Government aid to the private sector should direct more resources to dynamic, soundly-based enterprises. A better organized and more efficient public sector would release additional funds. And, of course, in both the public and private sectors, vocational skills and managerial ability should be promoted and better rewarded.

For these reforms to be effective, the population must be made aware of the need for change and be prepared to accept the consequences of the required relative shift of resources – from public and private consumption to investment, from sheltered activities to the exposed sector of the economy. ■

Source: OECD Economic Surveys – Greece.

## Turkey

tion of fixed-income earners of moderate means; centralization and proliferation of administrative checks leading to belated decisions with little economic impact; insufficient municipal funding; low productivity; and a heavily indebted public enterprise sector that has become a burden to the State. However, general government spending (29 per cent of GNP in 1986) is in toto substantially lower than in the other OECD countries, and much progress must still be made in areas such as social security (half the population has no insurance cover), education and infrastructure. Hence the need to increase public resources.

To tackle these problems, the Turkish Government in 1980 initiated a structural adjustment programme, which was strengthened three years later. On top of stream-



*In spite of a deteriorating current account, Turkey's economic indicators generally evolve in the right direction; the growth rate – at 8 per cent in 1986 and probably 6½ % this year – is the highest among OECD countries.*

lining the administration, its measures basically concerned two areas: reforming the tax system to correct injustices and increase the flow of regular revenues; and diminishing the role of central government by decentralizing public sector activity and privatizing public enterprises.

The tax reform programme, progressively implemented between 1981 and 1986, was considered quite far-reaching. To boost tax revenues, it sought to bring a greater number of transactions and individuals into the tax net; thus, farm incomes became taxable as did sales of unregistered property. In addition, a general VAT system was introduced in 1985, replacing measures covering only a limited number of transactions or commodities.

With a view toward greater equity, the authorities also adjusted tax rates and brackets to give relief to many people on fixed incomes (even those of very modest means) who saw a high income tax eat up in some cases more than half their earnings. Other measures were along similar lines: tax rebates on purchases of consumer staples, heavier property taxes and higher withholding tax rates on income from securities and bank deposits.

Some of these measures are helping to combat tax avoidance and evasion. To improve the worsening situation in this area, tougher measures have been introduced, including regular audits of the self-employed and small businesses and the modernization of litigation procedures.

The tax reform seems to have achieved its principal aims and has probably contributed to Turkey's robust economic performance. Furthermore, if the tax administration wields efficiently its new control instruments, the reform may boost revenues, enabling the government to improve levels of social insurance cover and education.

The policy of decentralization has allowed local authorities to gain greater autonomy. Their share of the public budget has risen rapidly, by 50 per cent since 1984. Profiting from their newfound freedom, they have increased substantially their expenditure, particularly on fixed investment to improve public services. Over the past two years, one disturbing consequence which has arisen from this has been a deficit on the consolidated local government account, a major factor in the deterioration of the trade balance.

The extra-budgetary financing of certain expenditure items has played a role in the process of fiscal decentralization. Special investment funds have been created, financed off-budget by levies and the sale of revenue participation shares. These agencies support certain transfers and public investment programmes and extend loans to the private sector. They do indeed

appear to have accelerated investment in infrastructure and housing, two areas where needs are still great in Turkey.

The last aspect of the reduced role of government in the economy is privatization. In 1983 the authorities began to look into a programme for privatizing the 35 public enterprises and their subsidiaries; today, the legal basis for it has already been established. As a result of the progressively improved financial position of four enterprises since 1980 a start can now be made by privatizing these. Through greater reliance on market mechanisms, Turkey hopes to boost, as other OECD countries do, the efficiency of industry and promote growth. Privatization should also facilitate capital market development.

Adjustment policies are thus beginning to have positive effects. But clearly there must be a sustained effort to eliminate inefficiencies and to further increase public resources. To halt any future deterioration of the balance of payments, it will be necessary to check the expansion of public spending programmes, particularly those of the special funds and local authorities. The authorities, aware of this problem, have already introduced measures in 1986 to slow down the pace of decentralization which, as it has been more rapid than intended, could have thrown the economy off course, jeopardizing the progress achieved. ■

Source: OECD Economic Surveys – Turkey.

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# Highlights from the OECD *Employment Outlook*

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## Activity for all in Tomorrow's Society

*The persistently high levels of unemployment of the last 15 years reflect an unsatisfied desire on the part of many people not only for income but also for the social identity which work provides.*

*Meeting the widespread need for activity is likely to involve more than just the achievement of a faster growth of conventional full-time jobs. Changes in ways of working will be needed – some of which are occurring already. Trends in life-cycle patterns of employment appear to be changing. Flexible education and training opportunities are growing rapidly, both for young people and for adults. It has become more common for paid employment to be combined with other activities, as is seen in the rise of part-time employment in many countries, whether it is viewed as occurring over a year or over a lifetime. Working time is being redistributed under the combined impact of technology and, apparently, genuinely changing social preferences.*

*These are the complex issues behind the call for a new framework for future labour market policies made by the OECD Ministers of Labour in November 1986. The just published Employment Outlook is an initial attempt to respond<sup>1</sup>.*

**C**urrent levels of unemployment are a legacy from the 1970s, when macro-economic conditions deteriorated sharply and forced manufacturing industry in the developed world to shed labour. Some sectors went into permanent decline, others had to get fit and lean to survive against growing international competition. Hence, although the rate of employment growth that has taken place within OECD economies since the current upturn started in 1982 has been on a par with the best achievements of previous recoveries (averaging 1¼ per cent a year), it has been insufficient to make a significant dent in the jobless rate in most countries, especially in Europe. Unemployment has become a deep-rooted structural problem rather than a cyclical phenomenon.

Since 1982, employment has increased particularly sharply in North America (2¼ per cent a year) and Australia (1¾ per cent), while Scandinavia as a whole has also done well (1½ per cent). In Japan, employment growth was at just under 1 per cent annually over 1982-86, but that

is still well ahead of OECD Europe as a whole (less than ½ per cent). The main laggards are the four largest European countries, where total employment only started to expand again in 1984.

Unemployment in the OECD area now stands at about 31 million, some 8¼ per cent of the labour force, which is only slightly below the peak level of 8.8 per cent recorded in 1983. This is the outcome of falls in unemployment in countries where employment growth has been high, and rises in the European countries with low rates of employment creation.

A growing proportion of the unemployed has been without a job for long periods; in Europe, for instance, half the total of 19½ million unemployed have been out of work for a year or more. These long-term unemployed present policy-makers with particularly grave problems.

In economic terms, the overall unemployment situation is disturbing insofar as the current recovery is already a mature one. While it does not look like it will be brought to an abrupt halt by inflationary

pressures as has happened in the past, it may be running out of steam. GNP growth in the OECD area is expected to slow down this year and then to stabilize at around 2-2½ per cent. More significantly, it is beginning to look as though the problem will not be solved simply by achieving higher rates of output growth, although that is an important objective. In view of the fact that labour force participation rates are expected to increase in most countries, substantial growth in employment will be required even to hold unemployment rates at current levels.

Short-term projections suggest that employment growth will not be sufficient even for stability in unemployment levels. It is expected to decline to less than 1¼ per cent in 1987 and 1988, with the result that the number of jobless may rise to 31½ million in 1988. Only in North America is there likely to be any reduction in long-term unemployment. Looking further ahead,

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1. *Employment Outlook*, OECD, Paris, September 1987.

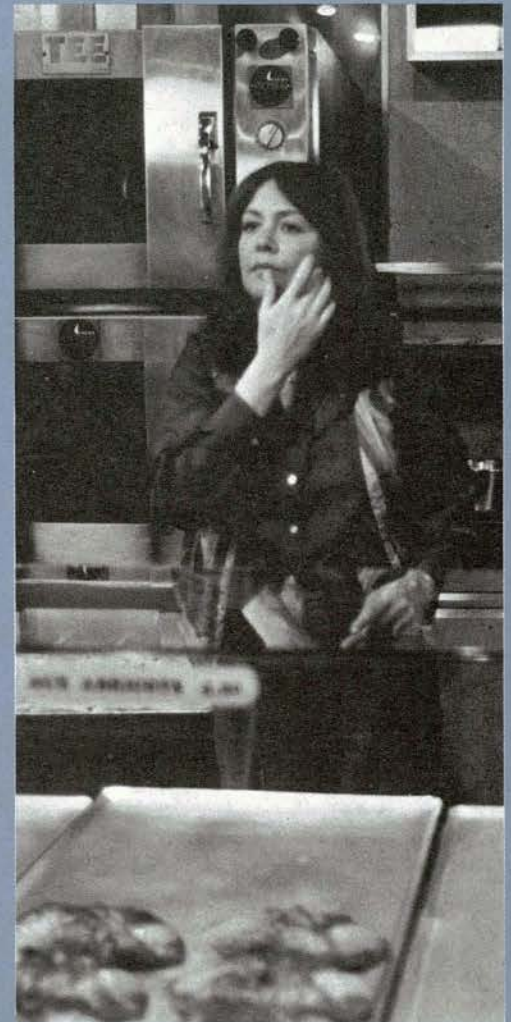
there is the prospect that the growth in the total OECD labour force will start to slow down as fewer young people reach working age. Even so, a much faster rate of job creation will have to be achieved if unemployment levels are to be restored to their 1979 level by 1995 (chart).

Female employment has shown a tendency to grow much faster than male employment in recent years. Males tend to be concentrated in industries showing secular declines in employment, and so particular efforts may be needed to improve job opportunities for them. Employment growth will also need to remain high if the growth in female participation is to continue. On top of that, current assessments of the demand for net new jobs may prove an understatement, since an improvement in job prospects and a general increase in employment could, as in the past, lead to higher-than-expected increases in participation rates, especially as many "discouraged" workers and others on the fringes of the labour market may re-enter the workforce.

have been financial and business services and social and community services.

The combination of an expanding service sector and growing female participation rates has gone hand-in-hand with an increase in part-time employment. Part-time jobs have risen steadily as a proportion of total employment, but there has not been any recent surge in the importance of part-time employment. In the past few years, however, there has been a noticeable increase in temporary jobs and, while they are of only marginal importance in most countries, in a few they have had a significant impact on employment. In Belgium, France and Ireland, for instance, permanent employment has declined while temporary employment has increased.

These qualitative shifts in employment patterns reflect not only the effects of changing technology but also changes in social preference. Hence, meeting the demand for paid work in the future may entail more than just bringing about a faster increase in the number of conventional full-time jobs. There is thus a need both for



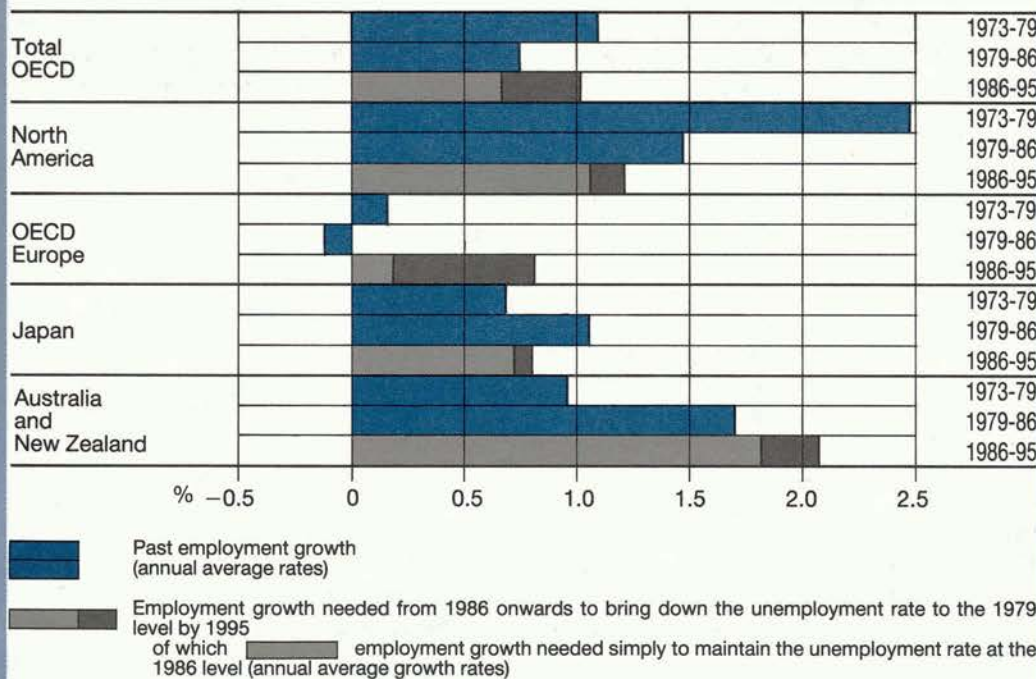
Female employment has grown much faster than that of men in recent years.

rements have been established. Firstly, higher rates of job creation are needed; secondly, labour markets must become more flexible as they expand; and thirdly, more equitable and effective adjustment policies are called for to help those unemployed people at a particular disadvantage in finding work.

#### The Need for Faster Job Creation

Higher rates of employment are required not only to provide an active role in society for all work-age people but also for a combination of social, economic and demographic reasons. Social security outlays and spending on health, education and other services are absorbing an ever larger share of national income. If commitments to these social policies are to be met in the coming years, when the proportion of the population that is retired or otherwise not in the workforce will be rising, then an expanded tax base will be needed to finance them. That is because a number of countries perceive that they are at or near the taxable capacity of the existing workforce, while they see little scope for significantly reducing benefits or services and are reluctant to finance them through increased public borrowing.

### THE JOB CREATION CHALLENGE



### Changing Attitudes to Work

Service sectors have been the main source of employment growth in all countries, and it is essentially disparities in the rate of job growth in these sectors that explain differences in overall employment performance between countries. Within the service sector, the most buoyant areas

the highest possible rates of job-creating growth and for a rapid development of new forms of employment.

### Policies for Making Work

The OECD is now giving close attention to the formulation of labour market policies for the years ahead, and three basic requi-

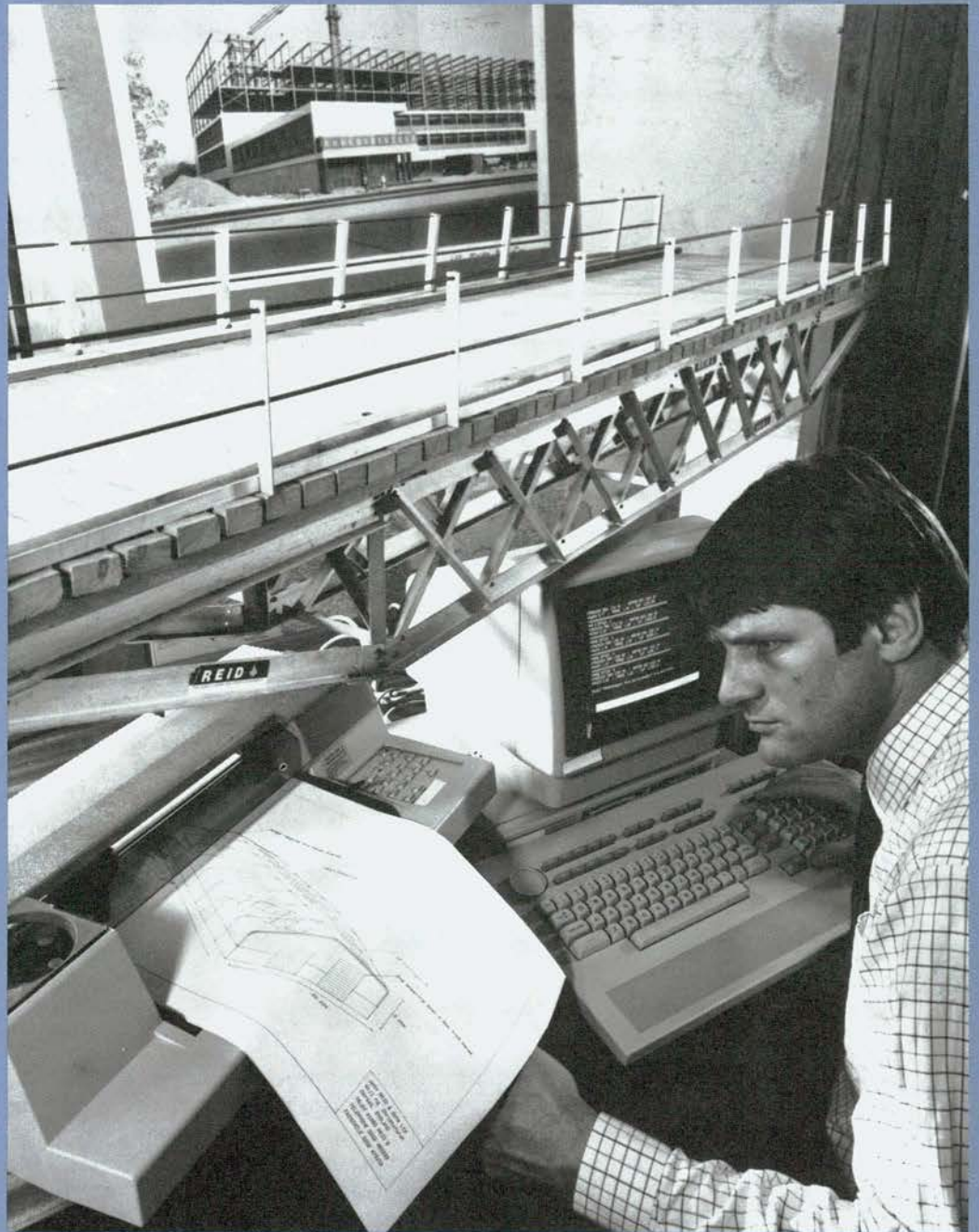
Ironically, the unemployed have not shared in the increase in welfare benefits in many countries. The gap between the income of those in work and those dependent on government transfers has widened, so that, apart from psychological reasons, there is a stronger financial incentive for the unemployed to find work.

For several decades to come, therefore, OECD countries will be under hard pressure to generate a rapid rise in the numbers of jobs and to minimize the cost and the waste of having large pools of idle and frustrated job-seekers. A rate of employment growth sufficient to expand tax bases to the degree needed for governments to finance social-spending commitments without overreaching taxable capacity is perfectly attainable. It would require Europe to achieve much the same rate of job creation in the next 10 years as the United States has recorded in the last 10.

In that regard, the pace of technological change is both a threat and an opportunity. It partly explains the high rate of job turnover in modern industrialized economies. The total number of jobs destroyed and the total number created in a decade approximately equals the total number of jobs in an economy, so that labour markets should be able to accommodate rapid rates of structural change.

It is interesting to note moreover, that job turnover rates are not significantly lower in Europe than in the United States, so that "resistance to change" cannot explain the unsatisfactory record of job creation in Europe. Over the long term output has expanded at similar rates in both North America and Europe; hence, it appears that differences in the process of structural change have been at the root of these variations in job-creation rates, with capital-intensive investment being favoured in Europe, while job-creating activities have been encouraged in North America, especially in the service sector. The result in Europe has been that the unemployed have become marginalized as outsiders to the market economy, while those with jobs are able to continue working and to earn higher wages on the strength of enhanced productivity through more capital intensive production methods.

Because of the large stock of capital equipment required per employee to support jobs at current wage levels, the cost in terms of capital investment of employing all the unemployed with jobs using the existing average capital stock would be enormous. In the first instance, therefore, a reasonably fast increase in employment could only be achieved through the creation of jobs that require a relatively small amount of capital to support them. That



*Jobs were created in the service sector largely as a result of the buoyancy of small and medium-sized enterprises.*

would imply moderate rates of growth of both productivity and real wages for some years, either through a general reduction in real wage growth or through offering lower wages for new jobs. Some claim the latter has happened in the United States, although others dispute it, but overall it is clear that aggregate productivity growth has been low and aggregate real wages almost constant there in recent years.

Given the current state of public finances, no significant growth in employment can be expected in the public sector in the coming years. In the private sector, the most buoyant source of new jobs are small businesses. In most countries, small and medium-sized firms are on balance the most important, and often the only, generators of net employment growth — though

this net growth is the outcome of high rates of job destruction and creation. While the wages offered by small, new firms are often relatively low, they tend to rise as the enterprise grows, and such firms may well continue to create new jobs even when they become medium-sized or large.

To take advantage of the vitality of small businesses, some governments are trying to encourage the entrepreneurial spirit. There has been a spontaneous revival of entrepreneurship in many countries, especially the United States, Japan and Italy, but it needs to be harnessed effectively if such firms are to prosper and grow and are to create a maximum of new (and lasting) jobs. Governments must not only provide a favourable investment climate for individuals and companies prepared to take risks, but must also ensure that business start-ups are not handicapped by a shortage of seed capital. ▶



### ***Creating More Flexible Labour Markets***

The greater the flexibility of an economy, the better it will be able to capitalize on its macro-economic propensity for output and employment growth. At the same time, an expanding economy renders the task of structural adjustment that much easier. One important symptom of labour market flexibility is moderation in nominal wage increases; that has been maintained in the current upswing and, if it continues, it could help accelerate the rate of employment growth. Flexibility does not mean that real wages need to be held down, however. Real wages can and should move in line with productivity and terms of trade trends, provided that an increasing proportion of the growth in real wages is used to finance job-creating investment rather than increased consumption.

Flexibility also concerns the ease with which labour is redirected from declining to expanding sectors, since the pace of potential economic growth will be enhanced by labour markets that are responsive to shifting patterns of demand. Steps have been taken in many countries to remove impediments to labour mobility, especially

institutional provisions that protect existing firms and those that work in them at the expense of job seekers. Much remains to be done, however, when it comes to the redeployment of labour and the redesign of job functions. Acquired job rights, well-defined job profiles and compartmentalized occupations persist in most countries, although Japan is a major exception. The spread of new technologies is leading to changes in work organization, management styles and new skill requirements, but the process has only just begun and traditional occupations and job demarcations will continue to be broken down.

To make the most of the new work opportunities being opened up by these developments, education and training policies have to be adapted to provide individuals with the knowledge and skills they need to cope with constantly evolving job profiles and work requirements. Security of employment for today's workers requires them to adjust easily within the company or to move elsewhere, depending on their career objectives.

If individuals are equipped for new kinds of jobs that are becoming available, employers will be encouraged to invest in

new technology and create jobs for them. But more positive policies may be needed to facilitate the entry, re-entry or retention of workers who might otherwise be unemployed or inactive. In particular, measures are needed to ease the abrupt transition faced by older workers whose long-term employment ends before the age at which they wish to retire. Within the workplace, movement to less demanding or part-time work should be viewed as an acceptable and desirable pre-retirement phase. Pension schemes need to be more flexible to accommodate these transitions, however, especially as in the medium term the ageing of populations implies a need for more, rather than fewer, older workers, so that greater flexibility as regards retirement ages and earnings limitations may be called for.

At a general level, workforce mobility needs to be enhanced by making pension schemes portable, by eliminating house ownership and mortgage regulations that discourage moves from one region to another, and by relaxing conditions governing job security that discourage employers from creating and filling new jobs.





*La Source, an organization created four years ago in the Paris area, seeks to meet society's current needs in two ways: providing help to families and the elderly in their own homes; and offering alternative jobs – outside institutional settings, part time, in meaningful contact with others. Employees of La Source, of whom 40 per cent come from the unemployment rolls, enjoy (along with their salary) four hours of training a month.*

### Finding Work for the Unemployed

Those displaced by the adjustment process are finding it particularly difficult to find work, since not only is the demand for labour low in relation to the supply, but their individual skills (if they have any) may be outdated and unwanted. If they are not retrained to give them some potential productive value to an employer, they may well end up joining the ranks of the long-term unemployed or become totally discouraged by the world of work and drop out of the labour force altogether. Training programmes designed to reintegrate such alienated workers have to be intensive and are consequently expensive.



The interrelated objectives of job creation, flexibility and adjustment cannot succeed unless the process of manpower development and adjustment is adequately conceived and organized. In modern industrial societies this involves not only governments, through their education and labour market policies, but also the private sector because of its growing investment in training and in modern techniques of human resource management. Priority should generally be given to preventive measures, notably education and training, and active labour market measures to deal with the problems of those most hard-hit. For these groups, income maintenance is indispensable but not enough. Active social and labour market policies, often involving local communities and the private sector, are needed to get them back into the labour market. Unemployment compensation policies and other appropriate assistance policies should be redirected to help their re-entry. And all these thrusts towards more active social and manpower policies need to contribute to more competitive and job-creating economies. ■

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