

the OECD OBSERVER

日本



JAPAN

JOB CREATION. COMPUTER CRIME
BIG GOVERNMENT: IS IT TOO BIG?
HAZARDOUS WASTES.
COMPARATIVE STATISTICS.

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EDITOR: Jane Bussiére

ASSOCIATE EDITOR:

Ulla Ranhall-Jeanneney

ART, PRODUCTION AND LAYOUT:

Marc Delemme

ASSISTANTS:

Rina Maiden,

Gérald Tingaud

PHOTO RESEARCH:

Silvia Thompson Lépot

All correspondence should be addressed to the Editor

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Twenty years ago in April, Japan became outside of the North American or The following articles review the

a Member of OECD, the first country European continents to do so. two decades of this partnership.

then ...

JAPAN

and now

In 1964, when Japan joined the OECD, its economic miracle was in full swing. Growth rates had averaged almost 9 ½ per cent over the previous decade, investment was higher than in any other OECD country, so were savings. Manpower was still coming off the farms. And wages, though mounting by 3.6 per cent a year in real terms, were outstripped by the rise in industrial productivity – also the highest among OECD countries. Perhaps more surprising, the economy – as noted by OECD's first economic survey of Japan in July of 1964 – had been very successful in carrying out what today would be called structural adjustment: there had been substantial shifts out of declining industries, such as coal mining, into what then seemed more promising ones – heavy machinery, electrical industries and chemicals.

But Japan was still near the bottom of the ladder in OECD terms, with per capita income only a tenth that of the United States, the then leader, and the economy was just emerging from its post-war isolation. Restrictions on foreign exchange allowed the government to keep imports to the developmental essentials and to help manage the fluctuating current balance. (The allocation system was abolished only a month before Japan joined OECD.) Foreign investment and other capital movements, both inward and outward, were tightly controlled.

Today, after a decade of near traumatic events, there are no longer any economic miracles. Japan's growth rate has plummeted from the 10 per cent level of the Sixties and early Seventies to 3 or 4 per cent. But its growth still compares very

favourably with that experienced by – or projected for – other OECD countries, similarly buffeted by the oil-price and other shocks. In 1983 Japan ranked second in growth after the United States along with Canada and Turkey. And Japan's per capita income has moved much closer to that of the West – 60 per cent of the level of Switzerland, which is now the leader (see Member Country Statistics page 19). (In terms of purchasing-power parity, the U.S. is the leader¹, but Japan's income is more than 80 per cent of that figure.) In many respects, the Japanese economy has outperformed the others – so much so that its very successes are said to be generating problems.

Measuring Success

What is the evidence of Japan's success? The European Management Forum, which has placed Japan at the top of its list for industrial competitiveness ever since such ratings began in 1978, uses 284 criteria, including some based on the views of business executives, but groups its findings into ten headings – dynamism of the economy, industrial efficacy, dynamics of the market, financial dynamism, human resources, state interference (a negative indicator for its authors), natural endowments, outward orientation, forward orientation, socio-political consensus. Japan is ranked highest among the 22 countries examined in the first, second, eighth and ninth categories.

The Swedish business weekly, *Veckans Affärer*, which has awarded its gold medal to Japan for two years running, uses six

economic indicators – GNP growth, current external balance, gross investment, registered unemployment, consumer prices and change in industrial labour costs. On all counts but the last, Japan is at or near the top for 1983.

As a rough indicator of economic performance, OECD's economists use a diamond-like object (see chart A) which links four points representing rises in GDP, productivity (GDP/employment), consumer prices (note the inverted scale) and the unemployment rate (also on an inverted scale). The bigger and more regular the diamond, the better. Japan has the best diamond among the six largest countries.

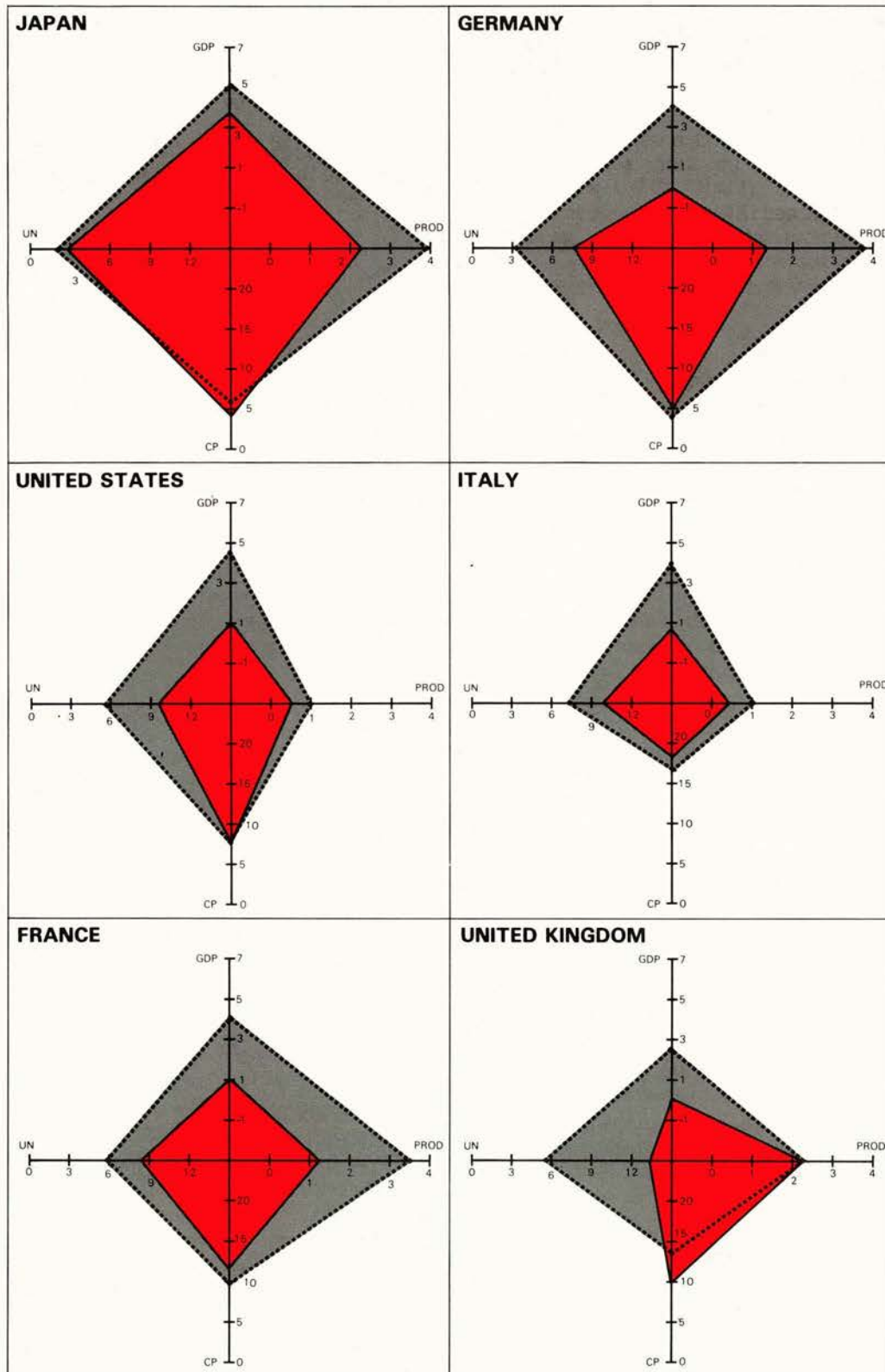
Indeed, Japan now has the lowest *inflation rate* in the OECD, bar none. This result was by no means a foregone conclusion in 1974 when, in the context of an overheated economy (synchronised in its overheating with most other OECD economies) and the first oil shock, the unions, in a departure from the stereotype of the company union as a model of moderation, pushed for and won wage increases amounting to 33 per cent in the so-called spring offensive, followed by a 47 per cent increase in summer bonuses, with the result that the overall wage bill rose considerably more than national income. But the labour unions quickly saw the impact of such large increases on inflation and employment and, in the context of a much tighter monetary policy, brought their demands back to more moderate dimen-

1. No figures on purchasing-power parity are available for Switzerland or seven other countries (see page 22).

A. MACRO-ECONOMIC PERFORMANCE

■ Average 1976-1979
■ Average 1980-1983

GDP: Average annual growth of GDP (volume)
 PROD: Average annual rise in productivity
 CP: Average annual rise in consumer prices (consumption deflator)
 UN: Unemployment rate (standardised)



Source: OECD

sions and kept them there, even in the face of the second oil shock. This is one of the many reasons why stagflation never took hold in Japan.

Unemployment too is low – lower than for any country in the OECD save Switzerland, Iceland and Luxembourg – and far

lower than for any other major economy. In Japanese terms, however, it was very high in 1983, and the question now is whether it will reach 3 per cent, as OECD predicts. The reluctance of Japanese employers to dismiss their workers and their preference for retraining and transferring them within

the firm (or to another related firm or subcontractor) is of capital importance in this context. But other characteristics of the Japanese labour market also play a role, particularly the tendency of women – and some men – to move out of the labour force when demand for labour falls. Youth unemployment has not been the problem it has in so many other countries because of the way the labour force is recruited – straight out of school, often as part of a system of life-time employment. It is certainly rising and is projected to reach 6 per cent in 1984. This increase must be

The "spring offensive" of 1974



seen in context, however: the other OECD countries that keep such statistics are forecast to have youth unemployment rates ranging from 8 1/2 to 42 per cent.

Even though Japan's legendary rate of productivity growth has slackened – with that of GDP – in manufacturing it is still growing more rapidly than that of any other OECD country. One estimate suggests that, as to absolute levels (very difficult to measure), productivity relative to real wages could be as much as 25 per cent higher than that of any of the other nine largest OECD countries measured².



Ingredients of Success

The key to this performance in the face of adversity seems to hinge on Japan's resilience, its ability to adapt its economy to change, whatever the source – oil shocks, increased competition from the newly industrialising countries (NICs), new market opportunities (products and countries) as well as new dead-ends, changing exchange rates and terms of trade and even, perhaps, protectionism.

From ultra-dependence to high energy-productivity

The most visible element in Japan's adjustment process has been its adroitness in weaning itself from petroleum since the first oil shock. Ironically, Japan, like other countries, had only recently become dependent on imported oil, having previously relied mainly on coal. From 1964 on, it developed as an energy-intensive, oil-based, country. By 1973, imported oil was providing almost 77 per cent of Japan's primary energy requirements, by far the largest proportion in OECD, and had replaced coal as the number one energy source. Because of this dependence, the Japanese economy plunged, after the first oil shock, into a "trilemma" with negative economic growth, unusually high inflation and a large balance of payments deficit. Japan was, for obvious reasons, one of the 16 charter members of OECD's International Energy Agency when it was created in November of 1974.

By 1982, Japan had reduced its dependence on oil to less than 62 per cent of energy requirements, one of the biggest reductions in the OECD area. Part of the adjustment has come from the development of alternative sources: the share of coal, purchased from Australia, the United States and Canada, has gone up again and is slated to rise further – to over 20 per cent of energy requirements by 1990. Japan has also moved into nuclear power (7 per cent of energy requirements in 1982, 11 per cent forecast for 1990). Japan joined OECD's Nuclear Energy Agency before the first oil crisis, in May of 1972, paving the way for NEA's conversion from a European to an OECD-wide agency³. Japan is importing liquified natural gas (LNG) from Indonesia, Brunei, Abu Dhabi and Alaska (6 per cent of requirements).

Industry used the lion's share of oil, and industry has done the lion's share of conservation. The so-called "productivity of energy" (output produced per unit of energy input) has improved by some 4.6 per cent a year since 1974.

Conservation and alternative sources are part of the story, but only part. There has also been a sharp shift away from energy-

consuming industries to high-tech and high-value-added types of production. What is striking about this shift is that it had been foreseen well before the first oil-price rise, in a "vision"⁴ published by the Ministry of International Trade and Industry (MITI) in 1970.

Resources out...

Japanese companies have been quick to move resources out of low-growth and low-productivity industries, especially those hit by high energy costs and the rise of the NICs. They were aided in this effort by a temporary (five-year) Law for the Structurally Depressed Industries designed to facilitate the scrapping of excess capacity in fourteen industries including shipbuilding, open-hearth and electric-furnace steel, synthetic fibres, aluminium smelting and three chemical fertilizers, which in all accounted for some 15 per cent of industrial production. Excess capacity of up to 45 per cent of the total (in the case of urea fertilizers) was marked for elimination. Another law facilitated training and retraining of workers laid off from these industries – a significant part of their labour force. In 1983, a new law with a similar name was passed to carry on the work. The most striking results have been obtained in aluminium, the most energy-intensive of industries and, in Japan, based on oil. Aluminium smelting capacity has been more than halved, and Japan is importing aluminium from Australia, Canada and the Third World.

The shipyards – Japan was and is the world's largest builder – have also undergone such a process, within the framework of 1976 OECD guidelines. Capacity was cut back 35 per cent by 1979.

In other industries, costs have been cut, new technology and production methods adopted, and obsolete plants abandoned in a monumental effort to rationalise. Thus in steel, conversion to continuous-casting technology has, for example, been pursued at a faster rate than in any comparable country. Japanese steel-makers can now operate at capacity-utilisation rates which would have been unprofitable in earlier years, and the industry has had to cut back production much less than other OECD countries. Japanese steel and shipbuilding are among the most productive in the world though both still have excess capacity in the present state of world demand. →

2. Productivity is defined as output per man in manufacturing converted to dollars with a set of purchasing-power-parity exchange rates geared to manufacturing.

3. Now only New Zealand is not a member.

4. "Vision" is the actual title of MITI white papers issued in 1970 and 1980 which indicated the directions in which it would be desirable for the economy to move.

...and resources in

Meanwhile, Japan has surged ahead in the knowledge-intensive, high-value-added orientation foreseen in MITI's 1970 vision. Electronics is the pace setter. (Growth of electronic-related products is shown in table 1 which was drawn up by Japan's Economic Planning Agency and includes in electronics many more items



Japan has greatly reduced its dependence on oil through conservation and use of alternative fuels. Above: propane and methane supplement oil in this Tokyo power plant. Below: a Japanese LNG tanker, the Bishu Maru, transports liquified natural gas to Tokyo from Indonesia.



than do the usual industrial breakdowns. For the more traditional breakdown of the growth industries see table 2.)

Recent developments have focussed on microelectronics, at first based on imported processes and products and oriented towards consumer goods industries. But having recognised the primacy of computers and telecommunications equipment as growth sectors, Japanese industry focussed on integrated circuits, which were the key to these technologies, and later on very large-scale integration. These are of a very high standard and permitted Japanese firms to garner a large share of the market for 16K random access memories (RAMs) or memory chips in the early 1980s, then for 64K RAMs. Japanese companies are the first, along with U.S. manufacturers, to produce 256K RAMs which will be available in volume in 1984. Perhaps the ultimate step of this sequence will be the fifth generation computer which will use ultra-large-scale integration in an attempt to leap-frog over the competition. Japanese companies have not only sold this technology at home and abroad but used it to produce advanced consumer goods like videotape recorders (VTRs)⁵ and capital goods like robots and numerically controlled machine tools. These in turn enabled Japanese companies in fields outside electronics – such as automobiles – to cut costs and to be more competitive abroad.

The part of this push towards microelectronics that has been most visible to the outside world is the exported part. And in many markets exports have been the engine of growth. But what is too often forgotten is that Japan has the second largest *internal* market in OECD, not only in terms of population but in terms of GNP

1. PRODUCTION OF ELECTRONICS-RELATED INDUSTRY GROUPS

Average annual rate of increase, 1975-1980
per cent

Video-Tape Recorders (VTRs)	93.7
Telecommunications equipment	91.6
Battery-powered wrist watches	73.9
Numerically controlled machine tools	58.8
Integrated circuits	53.1
Industrial robots	35.1
Facsimile for transmission of text	29.2
Static copying machines	27.7
Electronic switching equipment	22.0
Digital computers	17.1
Desk-top computers	14.9
Colour TV sets	8.4
Industrial production	7.3

Source: MITI

2. THE STRUCTURE OF JAPANESE INDUSTRIAL PRODUCTION ...

1980 = 100

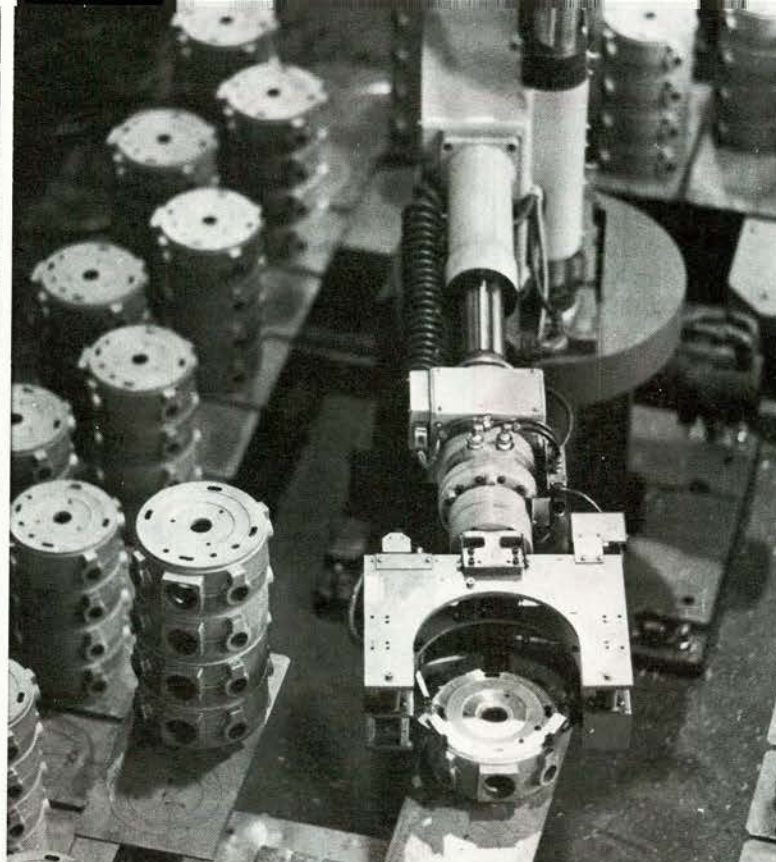
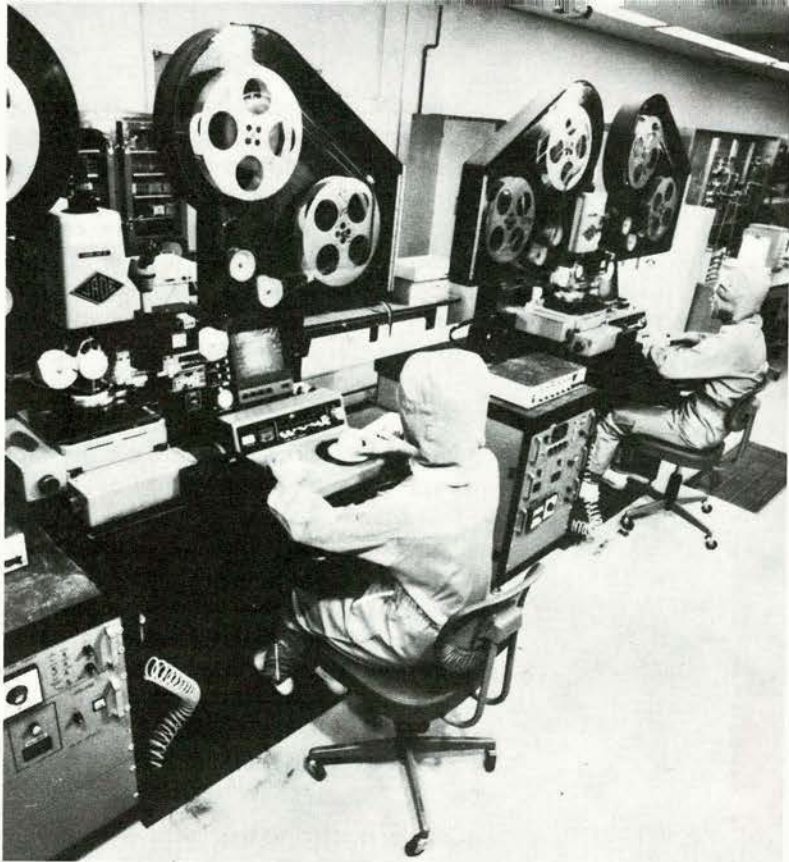
	1981	1982	1983
Mining & Manufacturing	101.0	101.3	104.8
Chemicals	99.8	102.5	107.5
Metals			
Iron & Steel	93.6	91.4	89.1
Non-ferrous metals	95.8	92.6	94.4 ¹
Fabricated metals	96.4	99.0	104.0
Machine industry	107.8	109.2	114.9 ¹
Electrical	113.9	125.2	145.9 ¹
Other industrial	102.2	100.6	98.5 ¹
Transportation (motor vehicles, ships, railroads, etc.)	105.8	99.1	94.1 ¹
Precision (cameras, watches, measuring instruments, etc.)	109.3	103.5	109.1 ¹
Other			
Textiles	98.4	97.4	96.5 ¹
Pulp & paper	94.4	97.1	102.0 ¹
Lumber & wood	91.2	87.4	84.7 ¹

1. 10 months to October.

Source: MITI

(when Japan joined OECD, it was fifth after the United States, Germany, the United Kingdom, and France) and many of the products now being exported have been widely sold on the Japanese market as well. For example, almost ninety-nine per cent of Japanese households have colour TV, an important export. Japan is the

5. Also called video cassette recorders (VCRs).



Japan has developed less energy-intensive and more knowledge-intensive types of production, particularly in microelectronics and "mechatronics". To left: film-type large-scale integrated circuits on the inspection line. To right: robots making robots at a Fanuc Fujitsu plant. Japan is the world's largest producer and user of robots. Progress in electronics and mechatronics has enabled companies in other fields, such as autos, to cut costs and be more competitive. Below: a Honda auto-assembly line.



largest producer of robots (and computerised automation more generally) in the world and also the largest user in absolute terms (Sweden is largest in relative terms) but, until recently, relatively few members of the Japanese robot population were being exported – 2 per cent of the total in 1980⁶. But exports are growing fast: in 1983, 20 per cent of a vastly increased production was exported.

Even VTRs, often singled out as the very symbol of Japan's export drive, have a broad base at home. In 1978 almost 40 per cent of VTR output was sold in Japan. Now 85 per cent of VTR output is exported, but some 15 per cent of Japanese households own a VTR, and the proportion is increasing rapidly.

The growth in exports was in any event part of the Japanese adjustment strategy,

designed to offset the increasing cost of oil which, despite Japan's success in reducing its dependence, still accounts for roughly a third of the country's imports by value. And the adjustment process has also included a dramatic shift in imports (shown in chart B). If energy is excluded from the comparisons, it is clear that Japan has turned away not only from oil but from other imported raw materials as well. The latter are first being processed in the country of production – the NICs and elsewhere – and only subsequently imported into Japan. Japan has become a net importer of clothing which also comes from the NICs (though Japan exports upmarket fashions). Light industrial and labour-intensive products have also been ceded to the Third World.

The keys to adjustment

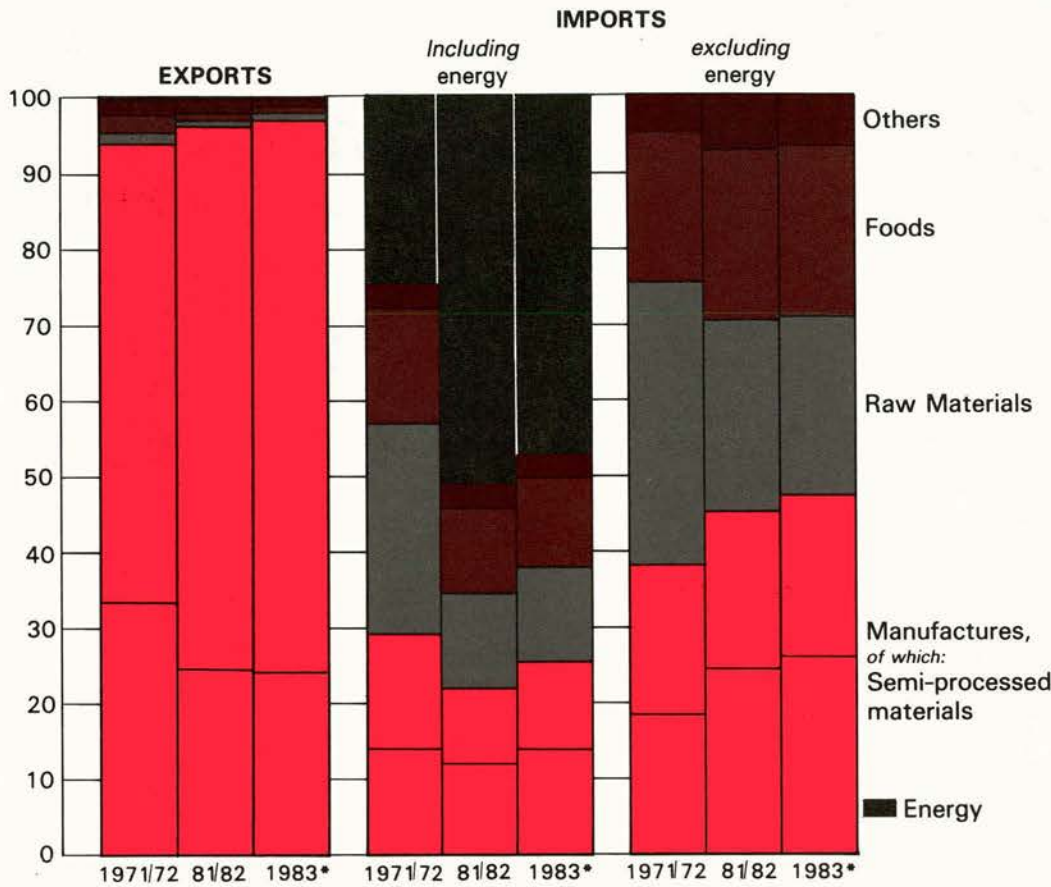
Much has been written about Japanese success in structural adjustment⁷, some of it from the point of view of those on the receiving end of the final product⁸. →

6. See *Industrial Robotics – Their Role in Manufacturing Industry*, OECD 1983.

7. *The most detailed, broadly based and recent is entitled Flexible Rigidities: Industrial Policy and Structural Adjustment in the Japanese Economy, 1970-1980*, July 1983, a 277-page study by Japanologist Ronald Dore with contributions by Koji Taira, a working paper for the ILO's International Division of Labour Programmes.

8. For example, *Foreign Industrial Targeting and its Effect on U.S. Industries-Phase I: Japan*, a 240-page study published by the U.S. International Trade Commission in October 1983.

B. THE STRUCTURE OF TRADE
per cent of total value



* 10 months to October

Source: Ministry of Finance, Summary report on Trade of Japan.

No doubt the strong innovative capacity of Japan, reflected in the amount of investment – far larger as a proportion of GNP than in any other OECD country – has been an important factor. Business fixed capital investment has been running at around

15 per cent of GDP, a level which makes it possible to bring about rapid changes in industrial structure. The high level of savings and the smooth way in which these flow into investment are relevant in this context.

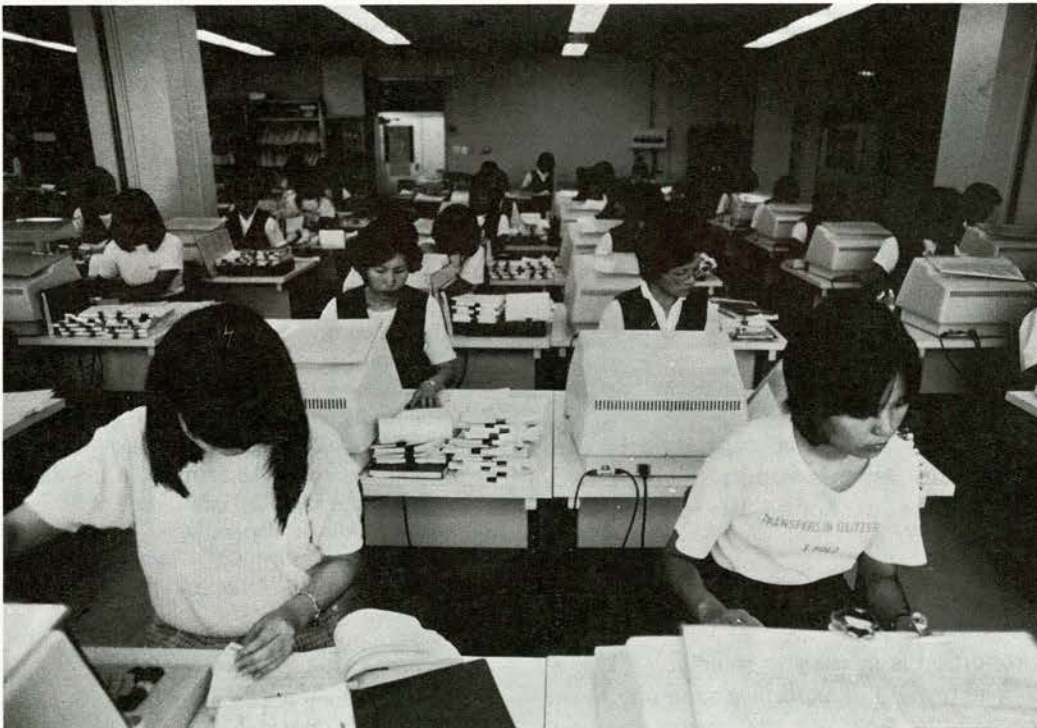
A second factor seems to be the educational level of the Japanese work force. More young people (up to age 18) attend secondary school full time than in any other OECD country, and at least 55 per cent of the work force have the equivalent of the French baccalauréat. This permits the smooth absorption of new technologies within the factory and facilitates cooperation between company executives and workers.

A third key would seem to be the fact that workers are hired straight from school so that training and retraining are built into the employment system, at least in the modern sector of the economy where workers are involved in the life-long employment system until retirement. This means that there is commitment on the part of the worker to the firm and *vice versa*. And technological change is accepted by both workers and trade unions.

Closely related to this is the emphasis in Japanese companies on quality, institutionally reinforced by the so-called “quality circles” to which workers and management both contribute. More generally, workers share in the long-term planning of the firm.

Because business is less dependent on equity financing than its counterparts in Europe or the United States – and hence shareholders play a smaller role – Japanese company executives perhaps take a longer-term view and, conversely, are less sensitive to cyclical ups and downs. That this can be a competitive advantage is evident from the 1975-76 experience when American firms cut back investment in integrated circuits and then, when

Three keys to Japan's successful structural adjustment: • The work force is highly educated; more than half have the equivalent of the French baccalauréat



recovery began, had no choice but to import them from Japan. (The pattern may now be repeating itself.)

Two final and decisive factors in Japan's adjustment: the country's astuteness in choosing areas of concentration and its ability to achieve a high technological standard which is related to the previously cited factors and increasingly owes much to the country's RD&D (research development and demonstration) effort (see page 14).

There is considerable controversy over the precise roles played by private industry, the government and its industrial policy, the trade unions and what one might call the cultural infrastructure of the society in this adjustment process.

One recent piece of analysis by OECD attributes the central role in successful adjustment to the dynamism of the private productive sector, nurtured by strong competition in domestic and foreign markets and managements who have placed heavy emphasis on developing new products and technologies. Active use of demand management, first monetary policy and then increasingly a fiscal policy which emphasized public investment and official loans to promote private investment outlays, set the stage for private initiative.

"Government intervention has been limited to areas requiring long lead times, large initial investment and integration of wide-ranging technology, implying joint projects among different companies. But adjustment has been facilitated by industry's acceptance of Government guidance as a legitimate process, and the role played by MITI in industrial policy-making appears rather unique. Indeed the nature of organic

THE JAPANESE TECHNOPOLIS

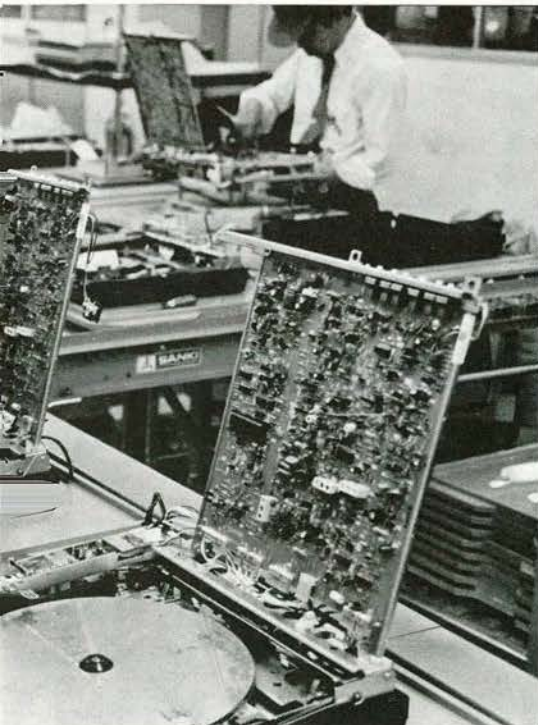
The technopolis is the product of at least three trends in Japan:

- The desire to intensify Japanese technological progress with home-grown developments.
- The fact that the high-technology firms tend to be footloose.
- The need to provide jobs in rural areas for local residents, including university graduates who, unless they work for local government, ordinarily have to move to the city to find jobs.

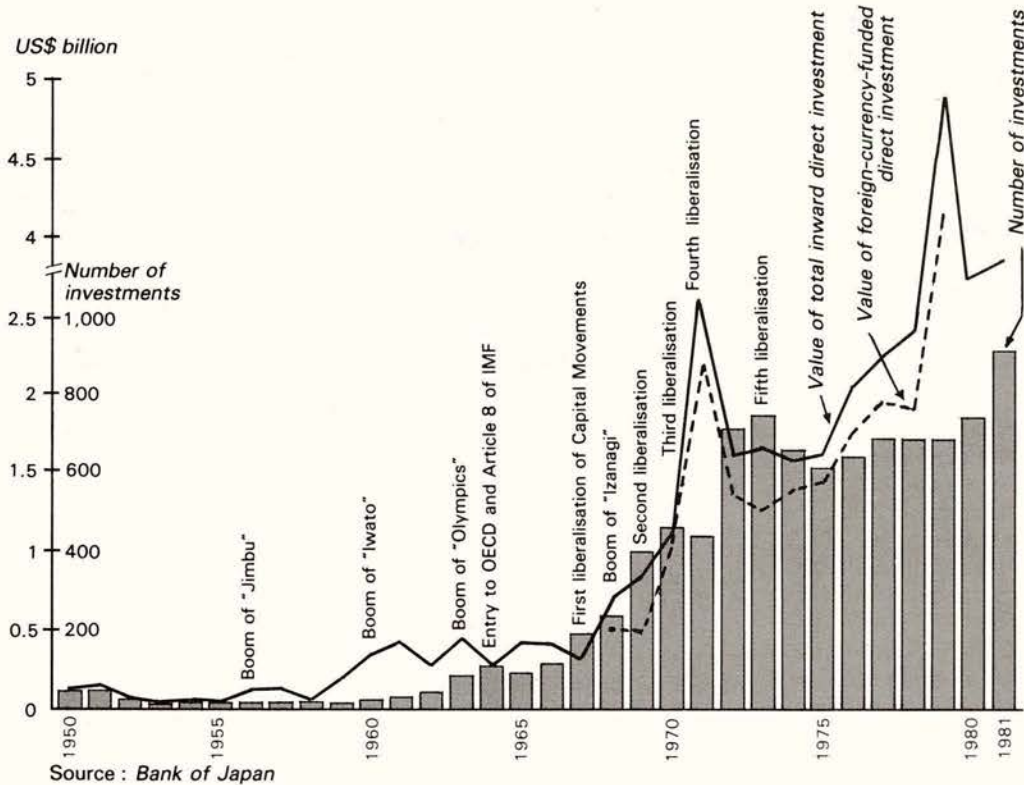
The idea is to create high-technology production in rural areas or small cities, to combine it with research institutes and/or universities in a pleasant living environment close to good transportation. Nineteen areas have been nominated and have submitted a preliminary plan. The ventures on the whole are to be grass-roots, innovative, small or medium-sized enterprises rather than branches of the old smokestack industries.



urát. • Lifelong training is built into the Japanese employment system. • Competition is intense, at home and abroad.



C. DIRECT INVESTMENT IN JAPAN (1950 – 1981)



The particularly large figures for 1971 reflect investments by General Motors and Chrysler Corporation. The large investments in 1979 were in the oil sector.

relationships between the administration, industry and the universities has probably exercised an important influence. Although imports of industrial goods have been substantially liberalised, some of these policies have provided protection to new industries from foreign competition as has been the case in other Member countries. It is interesting to note that these infant industries have gained great strength in a relatively short time so as not to need protection any longer.⁹

Opening Up to the World

No-one would deny that the Japanese economy is far more open today than twenty years ago or that there is greater interdependence between the Japanese and other economies. French wines are sold in the department stores of Tokyo and other cities; U.S. soybeans constitute the major source of that product in Japan; ASEA, the Swedish company, is assembling robots in Kobe; Nissan employs over a thousand Americans to make trucks near Nashville Tennessee. Japanese ships carry only a fraction of their own exports, and the Avenue de l'Opéra is often referred to as the Ginza of Paris because of the throngs of Japanese tourists. The Japanese firm Kyowa Hakko has signed research-licencing agreements on biotechnology with Jenson of Belgium and Genentech of the United States while Suntory (the maker

of Japanese whisky) is entering the biotechnology business through accords with Biogen of Switzerland. Foreigners can borrow yen on the Tokyo bond market in the form of Samurai bonds and buy and sell on the Tokyo Stock Exchange; the U.S. interest rate is attracting Japanese funds

Foreign companies are investing in Japan... Below: display centre of the Swedish company ASEA which makes robots in Kobe...



along with the others; Japanese can buy stocks on European and American markets; Japanese banks abound in London and other financial centres. The yen is the third largest reserve currency after the dollar and the Deutsche mark (though very little trade is denominated in it outside the Pacific Basin), and there is talk of Tokyo becoming a major world financial centre.

The internationalisation of capital movements has moved forward, especially since 1980, and Japan has become one of the world's largest net exporters of long-term capital, running a deficit of about \$15 billion in each of the last two years, though foreign investment into Japan is also rising (see chart C). Japan adhered to OECD's Code of Liberalisation of Capital Movements when it became a Member. In 1964, Japan had 18 reservations to the code. Gradually these were removed, the crucial change coming in 1980 with the amendment of the Foreign Exchange Law to reverse the rules: instead of all transactions being prohibited unless specifically authorised, all were authorised unless specifically prohibited. Now three limitations remain:

- on inward direct investment in agriculture and fisheries, extractive industries, oil and leather goods
- on outward direct investment in banking, fisheries and pearl culture
- on real estate investment in Japan (this may be attenuated in 1984).

Restrictions on shorter-term financial transactions (OECD's Code covers only

9. OECD's Economic Survey of Japan, 1981.

Nissan Reportedly to Unveil Toyo Kogyo Plans for British Plant Soon

Sharp to Build U.K. Factory

Fujitsu's Stake in Amdahl To Rise to 49.5% From 30%

Honda Sees BL Accord Soon, Mulls U.K. Motorcycle Plant

Sumitomo Set To Buy Stake In Swiss Bank

Sony to Begin Producing Some Color TVs in China

Wheeling-Pittsburgh Pact Praised

Analysts Say Japanese Link Likely to Save Ailing Firm

Sumitomo to Buy 51% of Gotthard, Sources Predict

Alumax to Take 25% Interest in Pechiney's Quebec Smelter

Purchase From Ambrosiano Would Be First Japanese of Europe Bank

Honda Sets Jakarta Venture

Sumitomo Seeks French Dunlop

... and Japanese firms are investing abroad.

capital movements of over a year) are also being reduced – the most recent step being to free forward-exchange operations. This is also true of other restrictions such as loans by subsidiaries of Japanese banks abroad in yen (offshore operations in Euroyen). Similarly, some administrative guidelines on operations by non-residents in Japan's capital and money markets are to be revised.

In trade, the progress made by Japan in opening up its markets over the last twenty years is often obscured by concern over the size of the current-account surplus in the balance of payments, presently running at more than \$20 billion, forecast to rise to over \$30 billion this year, and concentrated on the United States and the Common Market.

Japan's imports, which overall are lower in terms of GNP than in any other OECD country except the United States, are dominated by energy, raw and semi-processed materials and food products which come primarily from the non-OECD area. Manufactured products account for only a minor share of imports (20 per cent) and in terms of GNP are lower (3 per cent) than for the United States or Europe (4 and 6 per cent respectively). On a per-capita basis imports of manufactured goods are half those of the United States and a third of Europe's.

However, imports of manufactures are

gradually gaining weight. As shown in chart B their share of total imports has risen a full ten percentage points since 1971-72 if energy is excluded from the comparison. The export structure has also evolved, in line with changes in the industrial structure. In 1964, when Japan

Manufactures account for a small but growing share of Japanese imports. Below: the American-made Cray computer is presently being used in two Japanese service bureaus, and one will be purchased by NTT, the Japanese telecommunications agency this year.



became a Member of OECD, textiles accounted for roughly a fifth of total exports. Now they represent less than 5 per cent. In contrast, chemicals, metal products and machinery have constantly increased in importance, from just over half of total exports in 1964 to 90 per cent; machinery alone accounts for 65 per cent of the total and there is a constant move up market to more sophisticated products.

When Japan emerged as a significant force in the world economy, the contrast between its remarkable success in trade and the rather closed nature of its own economy presented a challenge, and in the last few years Japan, with an eye to its role in an interdependent world, and in response to requests by trading partners, has taken a series of "market-opening measures": eliminating or reducing tariffs on a range of items of particular concern to foreign producers, simplifying testing and certification procedures, and opening up the distribution system and government procurement – areas which are often cited by Japan's trading partners as non-tariff barriers to trade. Japan has reinforced its declared desire to increase its imports by opening offices and sending missions abroad to inform and encourage potential exporters.

There is a widespread view abroad that, despite progress made so far in trade liberalisation, more needs to be done to open up Japanese import markets, and talks – both bilateral and multilateral – are being held. Meanwhile trade imbalances and the strong competitiveness of Japanese exports have led Japan's trading partners to take protectionist measures



To left: Poitiers, the sole customs entry point for imports of video recorders into France over a period of six months (October 1982– April 1983). To right: Honfleur, where video recorders are being assembled by the Japanese company Akai.

– tariffs and quotas and, increasingly, voluntary restraint agreements, on autos, machine tools and VTRs for example. These now cover a large part of Japanese exports but are a two-edged sword. They can, for example, reduce the normally intense competition between Japanese producers on international markets and lead to export-pricing behaviour that is not to the foreign consumer's advantage.

It is clearly desirable that the response to the Japanese trade surplus should not be concentrated on trade-diminishing – and hence economic-activity-diminishing – lines but that it consist of measures that increase world trade and economic interdependence – more Japanese imports, and more Japanese investment and joint ventures in OECD countries and the developing world. Though far from an only and sufficient solution, a steady rise in Japan's total domestic demand is another appropriate response, and Japan is taking steps in this direction. However, fiscal policy has become constrained by large budget deficits and a substantial overhang of public debt. OECD calculations suggest that most of the budget deficit is "structural" and will remain large, even at higher levels of economic activity¹⁰. Moreover the weakness of the yen and the authorities' desire to support the exchange rate, in the context of high interest rates abroad, have constrained monetary policy.

In a recent article, Dr. Saburo Okita (who contributes other thoughts on page 17 of this issue) argues that "Japan is recycling its trade surplus to everyone's benefit and not piling up vast foreign currency reserves ... Of course efforts are needed to stimulate

domestic demand and increase imports, but it is wrong to assume that domestic stimulation will automatically eliminate the surplus in Japan's current account ... The basic response has to be in recycling surplus capital"¹¹.

As a now well-off country with a high rate of savings (third highest in OECD), Japan is in a favourable position to contribute to Third World development. Its aid programme, though small in relation to the size of the economy, has risen from 0.14 per cent of GNP in 1964 to 0.29 per cent in 1982, bringing the figure closer to the OECD average of 0.38 per cent. Moreover, considering how rapidly GNP has

evolved, this contribution is by no means a negligible one in absolute terms. A target set in 1978 to double Official Development Assistance by 1980 was exceeded by a substantial margin, and in 1981 a new objective was set – to double ODA again (in dollar terms) over the five years to 1985 – a very ambitious target. Japan is now the largest contributor to the Asian Development Bank and has diversified its aid to areas outside Asia, notably to the African

10. OECD's Economic Survey of Japan, 1983.

11. Journal of Japanese Trade and Industry, January-February 1984.

As a well-off country with a high rate of savings, Japan is in a good position to aid the Third World. Below: a Brazilian computer trainee whose studies in a vocational centre of the Aichi Prefectural Government are financed by Japan's International Cooperation Agency.



Development Fund (Japan is one of the largest donors) and Egypt.

Japanese firms are investing heavily in the developing world, catching up with other major capital exporters. With 11 per cent of all OECD flows in recent years, Japan is second only to the United States in the group of countries which make up OECD's Development Assistance Committee. Much of this capital – estimated at a cumulative \$17 billion – is invested in manufacturing joint ventures, more than two thirds of it in the Pacific Basin. A typical pattern is for a Japanese firm to set up in the areas which provide it with raw materials – petrochemicals in Indonesia, for example – and then move up the processing scale.

Japan has close trading relations with the Third World, almost 60 per cent of its imports coming from them and 43 per cent of its exports going to them, and thus is more closely linked to the developing world than any other industrialised economy. Japan is facilitating development by importing manufactured goods from the Third World as its own firms move up market to products with more value added.

Coping with Social Problems

In the late Sixties and early Seventies the Japanese Government, like many others, recognised that the economic growth of the Sixties had exploited the environment without a corresponding effort to build up depleted resources or prevent pernicious side effects. The problems were particularly intense in Japan, and the response was more rapid and vigorous than in most countries. Environmental laws were passed (no less than 15 in a single session of the Diet in 1970), an Environmental Agency was created, and standards for air and water – stricter than in most other countries – were set. The cost of this clean-up was high – 1.7 per cent of GNP in 1975, probably higher than elsewhere, but the benefits too were great. The deterioration of rivers, lakes and the sea was halted and in some cases reversed, despite the continuing growth of industry. The quantity of most – though not all – air pollutants was spectacularly reduced (chart D), and photochemical smog virtually eliminated. (The number of days on which the inhabitants of Tokyo can see Mount Fuji is higher than in the early Seventies).

In 1976, Japan invited OECD to review its environmental policies, and the resulting report¹² pointed not only to the progress made but also to the fact that policies to date had focussed almost solely on cleaning up pollution. What was needed next were measures to improve the quality of life. OECD suggested developing the



The Tancho crane, an endangered species, is being protected, and its numbers have increased.

"amenities" – a word and an idea that caught on – and improving the quality of life has become a focus of policy.

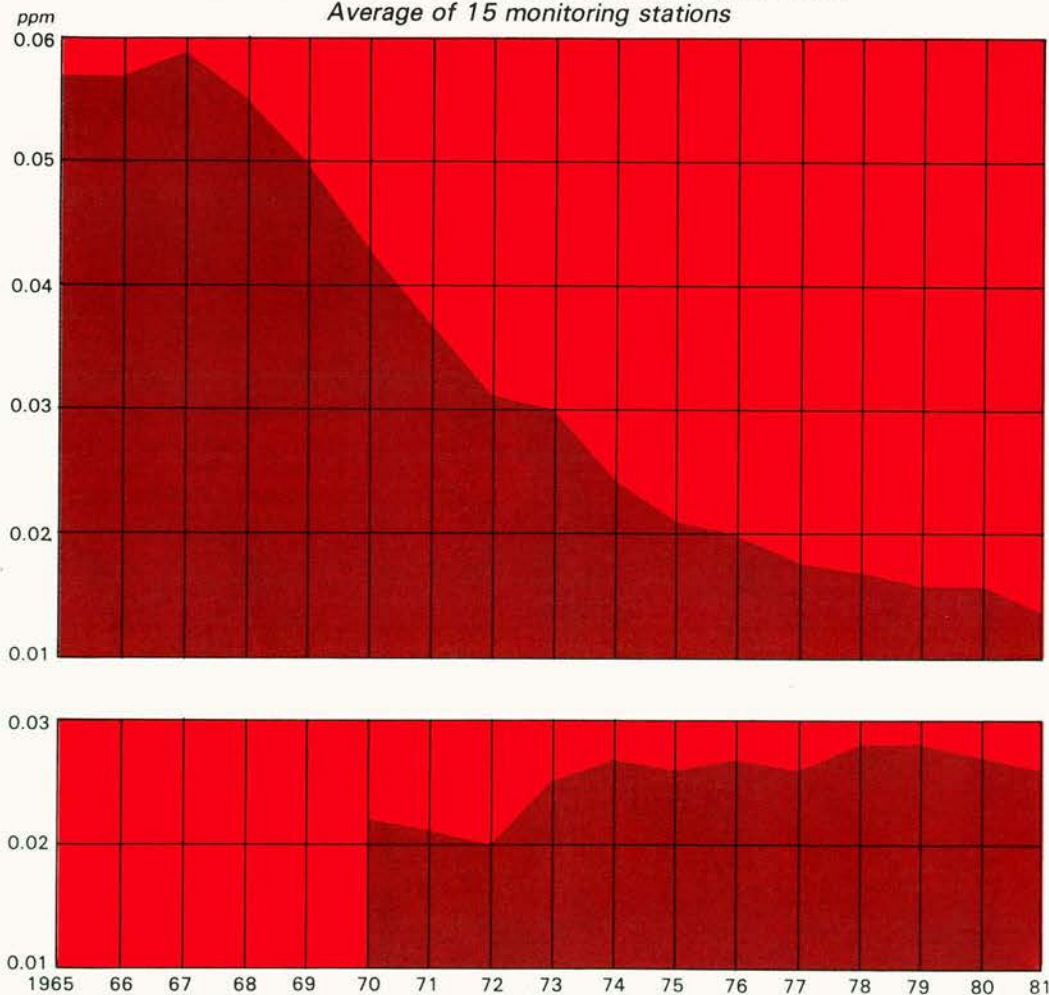
One of the items that remain on the

agenda is providing amenities in the cities. The context is a lack of land suitable for

12. Environment Policies in Japan, OECD 1977.

D. AVERAGE ANNUAL LEVELS OF SO₂ and NO₂

Average of 15 monitoring stations



Source: Quality of the Environment in Japan, 1983.

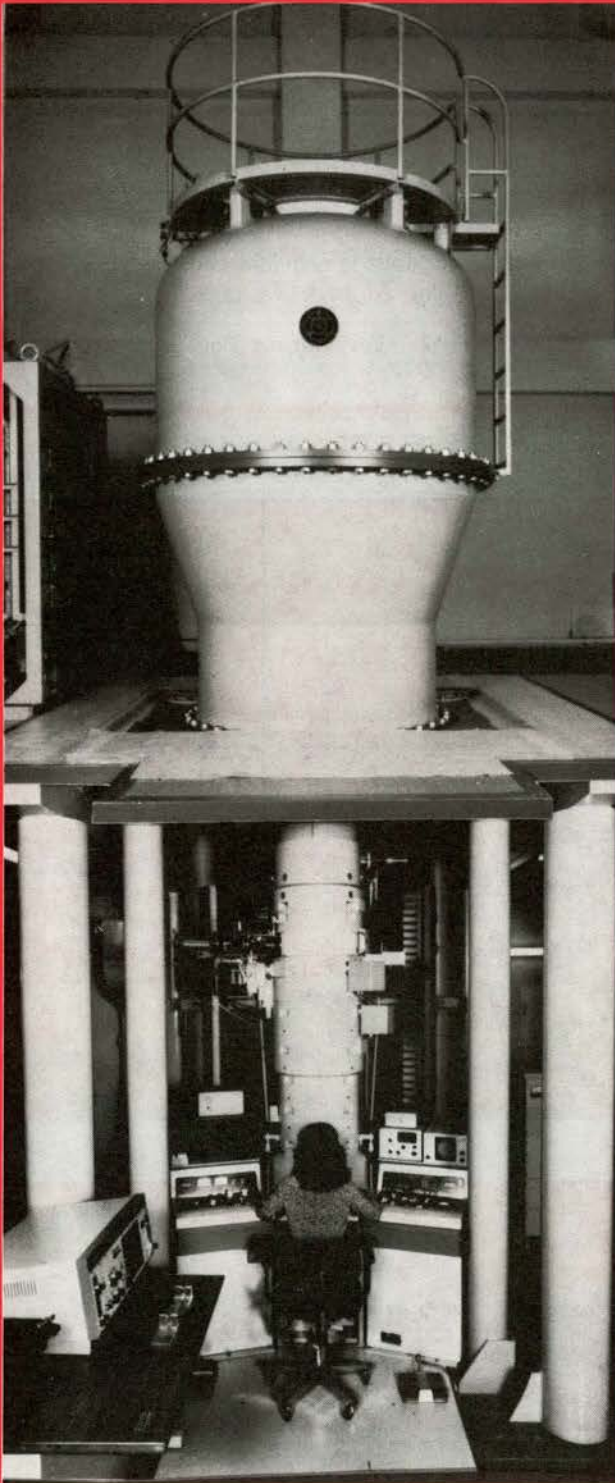
R & D AND TSUKUBA SCIENCE CITY

Since 1971 the amount spent on RD & D (research, development and demonstration) by Japan has been growing far more rapidly than that of any other major country, and total spending is now as large as that of France and Germany combined, though still well behind the United States (\$31 billion in 1982 at current prices and using purchasing power parities) as against \$81 billion for the U.S.). More of it is financed by industry than in other countries (60 as against 50 per cent on average).

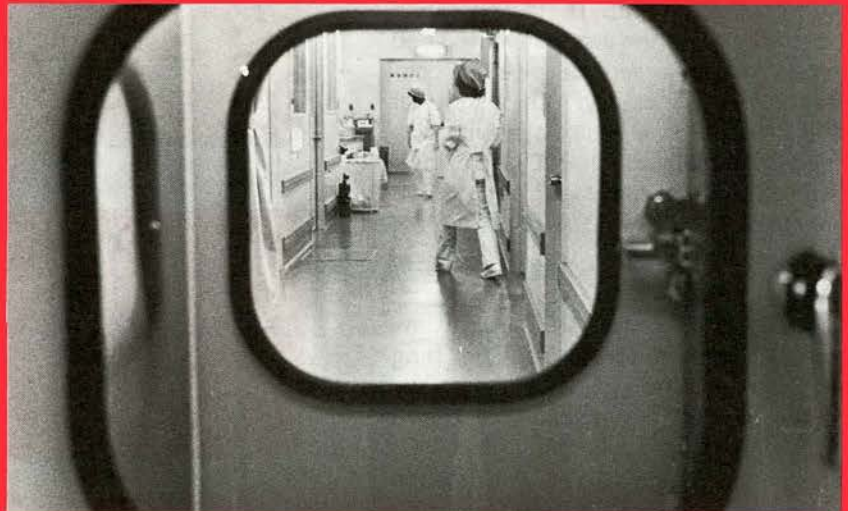
Recently Japan has been putting more effort into basic research — new materials like gallium arsenide for integrated circuits, superconductivity, fusion and advanced robotics. Japan has special experience in fermentation (soy sauce and sake) on which a part of biotechnology is based, and the food industry is a prime mover in this field. Japan is probably number two after the United States in biotechnology.

The symbol of the new reorientation towards basic research is Tsukuba

Science City, 60 kilometres northeast of Tokyo, built by the Government and concentrating, on its 28,650 hectares, the most up-to-date scientific facilities in virtually every advanced technological field. (It has its own high-energy physics institute with an accelerator, a cryogenics laboratory, a 175,000 gauss superconducting magnet and a high voltage electron microscope). The complex also includes a university and private research institutes financed by industry.



Three aspects of Japan's advanced R and D. To left: an ultra-high-voltage electron microscope. Above: the direct broadcasting satellite launched on January 23. Below: the Hoyashibara Biochemical Laboratory in Okayama where interferon is manufactured.





Still on the agenda: improving the quality of the housing stock and the urban environment more generally.

development and a consequent high price, a rate of urbanisation that has slowed down but is still on the rise, a need for improvement in the quality of the housing stock and for urban renewal and improved urban services – all this within the context of fiscal restraint. Japan has asked OECD to review its urban policies – the first OECD country to be examined in this field – and the issues will first be discussed at the time of an exhibition on dwellings and surroundings to be held in Tsukuba Science City in 1985 in which OECD will participate.

There is other unfinished business in the social domain. Ageing is one of the most characteristic features of Japanese society. This is not because Japan got old fastest; on the contrary, it is a “young” country compared to other OECD nations. But because of the dramatic improvement in life expectancy (now 73.3 for men and 79.2 for women – 6-7 years more than in 1965) plus the decline in the birth rate, it is now ageing more rapidly than other countries. The number of people 65 and over will have increased from 7 per cent of the population in 1970 to 14 per cent in 1996 – a period of only twenty-six years, as against eighty-five years for the same percentage change in Sweden, for example.

To prepare for this cohort, state pensions, in 1973, were put on a more equal footing with those of other countries (a

maximum of 60 per cent of income excluding bonuses, or 45 per cent including them, when the system is “mature” i.e. when retirees are receiving their full pensions). Even now, before maturity, pensions have become the largest item (almost a third) in Japan’s rapidly rising social outlay¹³ and hence a drain on public expenditure at a time when the country is suffering from budget deficits, a high level of debt, and obstacles to higher taxation (although Japan has the lowest tax burden in the OECD). An ageing population also means higher expenditure on health which accounts for a big chunk of social welfare spending as well.

Ageing will entail another problem, particular to Japanese society. Traditionally, employees have been required to retire at age 55 but received no pensions until age 60; the usual solution for the retiree was to find another, lower-paying and perhaps marginal job in the intervening years. Now older workers (including, presumably, some of those whose state pensions are inadequate because they have so few years of credit) increasingly find themselves on the list of the unemployed. In 1982, the unemployment rate for workers aged 55-64 was 4.5 per cent. The retirement age is moving up – it is typically around 58 at the present time – and the unions have put great emphasis on this matter, sometimes as a trade-off for wage moderation. The Ministry of Labour favours raising the

retirement age by 1985 to a uniform 60 years, when the state pension begins.

Unemployment is becoming a problem for other groups as well, as the employment system departs from its prototype: lifetime employment applies mainly to those in large firms in the modern sector with a regular job, and there are coming to be fewer of these and correspondingly more temporary and part-time workers who can be dismissed more easily. For these and other reasons (including the rising number of working-age women who want to work) and despite the traditional flexibility of the Japanese labour market, some rise in the overall unemployment rate seems probable, especially if economic growth does not strengthen.

Some of the other problems currently being discussed with intensity in Japan read much like those that afflict so many OECD countries – violence in the schools, tension in the family, rising divorce rates, the very heavy educational load on children in a competitive society and lack of opportunity for women. Japan will have to be as creative in solving these newer problems as it has been in coping with economic change.

13. Japanese social welfare expenditures are increasing more rapidly than those of any other OECD country but are still at a relatively low level compared to other OECD nations – 17.5 per cent of GNP as against a maximum of 38 per cent (for Belgium).

JAPAN AND THE OECD

A Message from Japan's Minister for Foreign Affairs, Shintaro Abe

It gives me great pleasure to send this message to the readers of the *OECD Observer* to mark the 20th anniversary of Japan's becoming a Member of OECD.

I have myself had the privilege of participating in sessions of the OECD Ministerial Conference, both as Minister for Foreign Affairs and as Minister of International Trade and Industry. It was in great part to those meetings that I owe my friendship with the Secretary General, Mr. van Lennep, and many others in the Organisation, something I value greatly. I found those sessions invaluable opportunities for exchanges of views with them and with others participating. It was also extremely gratifying to see at first hand how close the relationship is between Japan and OECD.

It was a very important milestone in our history when Japan became a full member of OECD on 28th April, 1964. Japan had for many years been engaged in the task of rebuilding and developing its economy, and it was both the earnest wish of the Japanese people and the fundamental policy of the Government to participate as actively as possible in international cooperative activities in the economic field. It was for this reason that we were always acutely interested in membership of OECD.

OECD may be said to be an organisation whose primary function is to promote cooperation among industrialised countries. Hence, Japan, which shared OECD's belief in the market economy and was already an industrialised country enjoying rapid economic growth, naturally wished to become a member of the Organisation and contribute significantly to its activities.

We made this desire known to the existing Members and requested admission. Japan had already become a Member of the Development Assistance Group in the days of the OEEC. Following the visit of Foreign Minister Ohira and Prime Minister Ikeda to Europe in 1962, the Ministerial Conference approved Japan's membership of OECD in principle in March 1963, and Japan was formally admitted to full membership in 1964. At almost the same time, Japan accepted the obligations under Article 8 of the IMF Agreement and Article 11 of the GATT, and all three events gave a strong impetus to the liberalisation of Japan's economy in foreign exchange, trade and capital transactions. 1964 was, without doubt, a major turning point for Japan's economy.

Twenty years have passed, years in which the world economy has faced many difficulties, including two oil crises followed by world recessions. Despite such adverse circumstances, OECD has made invaluable contributions to the attainment of its main objectives: sustained economic growth, expansion of free and multilateral trade and promotion of development assistance. The Organisation has also dealt vigorously with problems in a wide range of fields, such as the environment, natural resources, energy, and science and technology, responding dynamically to the needs of the times. When we consider the achievements of OECD, we cannot but be reminded of what makes the Organisation unique and effective. First, it is a forum for industrialised countries which have a great deal in common and basically adhere to the market economy. Second, it covers almost every area except political and military affairs (economic policy, trade, aid, energy, labour, environment, science and technology, and so on) and is consequently able to deal with problems simultaneously involving several of these areas. Third, it is a forum for free exchange of views among Member countries, exchanges through which they are able to arrive at a common perception regarding the various problems and promote harmonisation of their policies.

Through its membership in such an organisation, Japan has both been able to increase its cooperation with other developed countries and to benefit greatly in many other ways. For example, OECD discussions were of considerable help when we were working to solve very serious problems accompanying our rapid economic growth, such as inflation and environmental pollution.

Of course, what has happened to the Japanese economy in the last twenty years has meant that the role Japan is expected to play in OECD and its influence in the Organisation have increased dramatically since the time of Japan's admission. For example, OECD clearly feels that the experience of Japan, which has enjoyed relatively good performance during the recent period of poor economic growth, may well contain ideas that will help to overcome the economic difficulties the world is facing. I believe that Japan has also contributed in no small way to promoting the roll-back of protectionism to which the Ministers of OECD countries committed themselves in the Ministerial Council in May, 1983, not only by refraining from adopting protectionist measures but also by making continuous efforts to open its market further, with the objective of strengthening the free and multilateral trading system. And OECD's "Interfutures" study, which was launched in response to a Japanese initiative, had a broad, significant and beneficial impact on discussions about the future direction of the world economy.

I was very pleased to learn of the decision made in the Council last December that OECD will participate in the International Exhibition to be held in Tsukuba, Japan, in 1985. I feel that this is clear evidence that Japan's role and contribution are appreciated in OECD. It also gave me great pleasure to be able to celebrate the tenth anniversary of OECD's Publications and Information Centre in Tokyo with Secretary General van Lennep during his visit to Japan last year.

We are determined to increase our efforts to make our participation yet more fruitful for both the Organisation and the international community, giving full weight to what OECD expects of Japan.

Economic recovery, albeit gradual, is now underway in most of the industrialised countries, but many problems have yet to be solved. Indeed, we are surrounded by new issues and problems, such as changes in the industrial structure brought about by scientific and technological innovation, protectionism inspired by recession and high unemployment rates, the interlinkage between trade and finance and an expansion of trade in services that calls for the establishment of international rules in this area. To these issues and problems no ready-made solutions exist.

OECD is today, more than ever, called upon to play an important role in the coordination of the efforts of the industrialised countries to overcome these common problems because it is the most suitable forum in which to deal with these new issues. I am confident that, with its spirit of international cooperation and with its accumulated expertise in all the relevant fields, OECD will fully satisfy our expectations.

Japan, supporting the free and multilateral trade system and desiring increased and more effective international cooperation, will always remain loyal to its commitment to cooperate and contribute to the progress of OECD and the success of its activities, fully conscious of our increasing responsibilities in the international community. We know that nothing can benefit Japan and its economy more than such international contributions to the common good.

For OECD Member countries to live with change, it is necessary that their policies be consistent with the democratic political system and, at the same time, with the requirements of a mature industrial society, a stage which most of the OECD countries have now attained. Coercive measures or regimented systems must be avoided. Policies based on the market mechanism will be conducive to meeting these necessities. The dynamism of the market economy is best realised by establishing a "virtuous circle" of non-inflationary sustainable growth, technical innovation, active investment and creation of job opportunities. It is important to note that friction arising from the process of structural change and technological innovation can best be resolved in the long run by enhancing flexibility and by adequate economic growth.

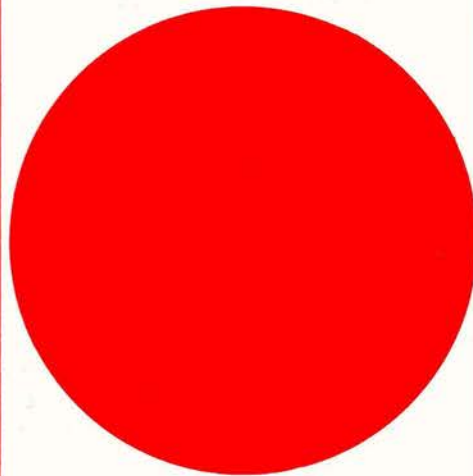
Japan's Performance – and Some Problems

This year, the 20th anniversary of Japan's accession to the OECD will be celebrated. Since starting from a poor agricultural economy more than a century ago, Japan has experienced various stages of development. As a late-comer to the industrial world, its earlier period was characterised by policies designed to enable Japan to "catch-up with the advanced countries". After the Second World War, Japan attained a remarkable growth rate of over ten per cent per annum during the years of the late 1950s up to the early 1970s. The National Income Doubling Plan was formulated in 1960, and its target was attained in seven years instead of ten years as set out in the plan.

About fifteen years ago, when Dr. Thorkil Kristensen left the position of Secretary-General of OECD, a series of essays was published in book form in his honour. Among the economists and diplomats from Member countries who contributed to this book, I wrote a chapter entitled "the Virtuous Circle of Accelerated Growth" in which I analysed the mechanism of high growth and predicted the emergence of rapidly growing economies, a phenomenon which was later termed the NICs (newly industrialising countries) by the OECD.

In the decade of the 1970s and early 1980s, the OECD economies have experienced two oil shocks and prolonged recessions. Japan's growth rate declined to five per cent per annum during the 1970s and in recent years has dropped to around 3-4 per cent. At the same time, Japan is reaching the state of a mature industrial society. The general orientation of policy has also shifted to meet this change. In many ways, Japan now shares the prob-

A Japanese Viewpoint



by Dr. Saburo Okita,
Former Japanese Foreign
Minister

lems of other OECD countries. Sometimes outside observers emphasize the difference between Japan and other industrial countries, but from our point of view, our economy and society are characterised by many more similarities with other OECD countries than differences, since our system is fundamentally based on a market economy and private enterprise system. It may be said, however, that Japan's economic performance in recent years has been good as compared with that of other OECD countries. Here I may point out some of the causes of this relative success:

Flexibility of the Japanese society and severe competition among enterprises

It is generally recognised that there has been strong competition in Japanese society, and such competition has motivated entrepreneurs' positive attitude towards investment and introduction of new technologies. This, coupled with the general social flexibility, helped positive response to change.

Rational industrial adjustment policies

The basic approach by the Government is to introduce measures designed to help ensure the dynamic development and adjustment to change of the private sector by maximising its vitality under the free market mechanism and open market system, although agriculture is not yet quite in line with this basic approach due to various political and social constraints.

Policies for declining industries are to facilitate positive adjustment without recourse to protectionist measures. In other words, policies are directed to the scaling down, in an orderly way, of industries which are losing comparative advantage, and are designed to encourage measures to revitalise their activities where viable.

In the case of the aluminium industry, for example, based on the guideline recommended by the Government, its production capacity was reduced from 1,640,000 tons per year in 1978 to 740,000 tons in 1982, and actual production has declined from 1,040,000 tons to 300,000 tons. During the same period, imports of aluminium increased from 760,000 tons to 1,350,000 tons, thus raising the import dependency ratio from 43 to 82 per cent.

The shipbuilding industry is another example, cutting down its capacity from 9,800,000 cgrt¹ in 1977 to 6,200,000 cgrt in 1979, while actual production declined by about 40 per cent during the same period. In this case, the share of Japanese shipbuilding in total sales of shipbuilding companies declined from 42

1. Compensated gross registered tonnes.

per cent to 28 per cent during the same period.

Policies for new technology are to promote technology development in the areas where the private sector alone is not capable of carrying out research and development. Mainly in basic research areas with high cost, high risk and long lead time, the Government sometimes takes direct measures such as the support of a portion of research funds, although the Government's share in the total R&D expenditure is smaller than that of other OECD countries.

Another measure to promote industrial progress is to provide visions of emerging trends of industrial structure which are intended to give useful and credible indications to entrepreneurs in making their decisions. This is not "central planning" because adoption or utilisation of visions is left to the discretion of each enterprise. The Government also provides inducements by preparing a favourable environment to help industries' own efforts, although legal, financial and taxation measures to that end are limited in scope.

Labour-management relationship

Mutual confidence between labour and management is relatively strong in Japan. Employers generally regard workers as partners in their enterprise and avoid dismissal of the redundant labour force through internal transfer to new areas of activity.

On the labour side, workers are generally receptive to technological innovation and structural change. Japan's high level of education and stable labour-management relations contribute to this situation. It is also a wide-spread practice to encourage participation of labour in entrepreneurs' decision-making, including quality control in factories, development of new products, and so forth.

Wage levels are agreed upon in a flexible manner by taking due account of the business performance of the enterprise as well as of general economic conditions.

The current cooperative relationship of mutual confidence is based on the severe lessons learned from past experiences of conflicts between labour and management, particularly in the early post-war years. Both sides have come to realise that conflict does not lead to business development and stability of employment, and that cooperative relations are most beneficial to themselves. Such mutual confidence contributes greatly to the enterprise's flexible response to change. The basic approach of Government employment policy is to provide guidance and support for private sector's efforts to respond positively to change.

Future problems

Japan is now facing emerging problems. Some of them are illustrated in the study by the Long-Range-Outlook Committee of the Government which in the summer of 1982 produced a report entitled *Japan in the Year 2000*. I worked as Chairman of this Committee.

Some of the salient issues touched upon are:

- the rapid process of ageing of the population. The population of 62 and above accounted for 5 per cent of the total in 1960, 10 per cent in 1983 and will reach 16 per cent in 2000 and 19 per cent in 2010. This means that in the not too distant future, Japan will have the oldest age structure among OECD countries.
- Japan, now one of the leading countries in the field of high technology, has a difficult task in developing new technological frontiers.
- Japan has to live in a new and broader environment, responsive to the changing world economy and to interact in harmony with the other nations of the world.

A Role for OECD

What can OECD do to help Japan, and all Japan's economic partners, face up to the problems of change that now confront us?

My association with the OECD is not only a long one, but it also extends to a very wide range of OECD activities. Naturally, as an economist, I have been deeply concerned with discussions on macroeconomic issues. But I have also been involved in discussions in other fields, such as science and technology, environment, development assistance and energy, in various fora within the Organisation.

Looking back over 20 years of OECD activities, I renew my conviction in the useful nature of the Organisation and the mounting importance of the role it plays in the world economy. In the first place, it has provided a valuable common arena in which Member countries can harmonize their own policies towards the achievement of common objectives, not by enforcement but through mutual consultation and exchange of views.

Secondly, I should like to point out that the OECD, in its wide range of activities, has consistently taken due consideration of the position of "South" countries. Although the Organisation is composed of "North" countries, it has always tried to reflect the position of the South in its policy decisions. The OECD is an Organisation of twenty-four countries, but it is also an Organisation for the world. To a certain degree, this has been possible because of the OECD forum for the discussion of assistance for devel-

oping countries (DAC). I strongly hope that the OECD will continue its world-wide perspective. The fact that the OECD's "Interfutures" report, published in 1979, was designed to study the future development of advanced industrialised societies in harmony with that of developing countries demonstrates this broad perspective.

What the OECD can and should do is, first, keep a sharp eye on the economic and social development of the Member countries and take the initiative in tackling new issues and problems which arise in these countries. Only the OECD is able to take a comprehensive approach to such problems as education, environment and energy.

The Organisation should also maintain a balanced approach towards long and short-term problems. The OECD can fulfill its mandate by analysing and proposing solutions, not only for current problems but also for long-term issues. In this respect, I recall an essay in "Problems of Modern Society" by OECD's former Secretary-General, Dr. Kristensen, which provided Member governments with an assessment of the major longer-term issues of industrial society and greatly stimulated intellectual discussions among Member countries. There can be no real solution to short-term problems without due consideration to long-term issues, and *vice versa*. In this regard, the recent Ministerial Conference on "Longer-term Performance of OECD Economies: Challenges Facing Governments", under the leadership of OECD's Secretary-General, Mr. van Lennep, was of great significance.

Today's world economy is characterised by rapidly growing interlinkage and interdependence. National policies cannot be implemented without their having a significant impact on the international economy, and likewise, no international measures can be carried out without their affecting the domestic economies. Any solution to a problem in a specific sector of the world economy is impossible without a sober consideration of the problems in other sectors. The problem of accumulated indebtedness in developing countries is a good example. The economic difficulties of these countries could be alleviated by the recovery of OECD economies and the steady expansion of world trade. At the same time, growth of OECD economies will be positively influenced by the economic revival of debtor countries.

The OECD is now confronted with a great challenge. This is the time for the Organisation to demonstrate its ability to cope with the inter-related and difficult problems of both a long-term and short-term nature. This is only possible through intensified international cooperation backed up by strong political determination to progress by all the Member countries.

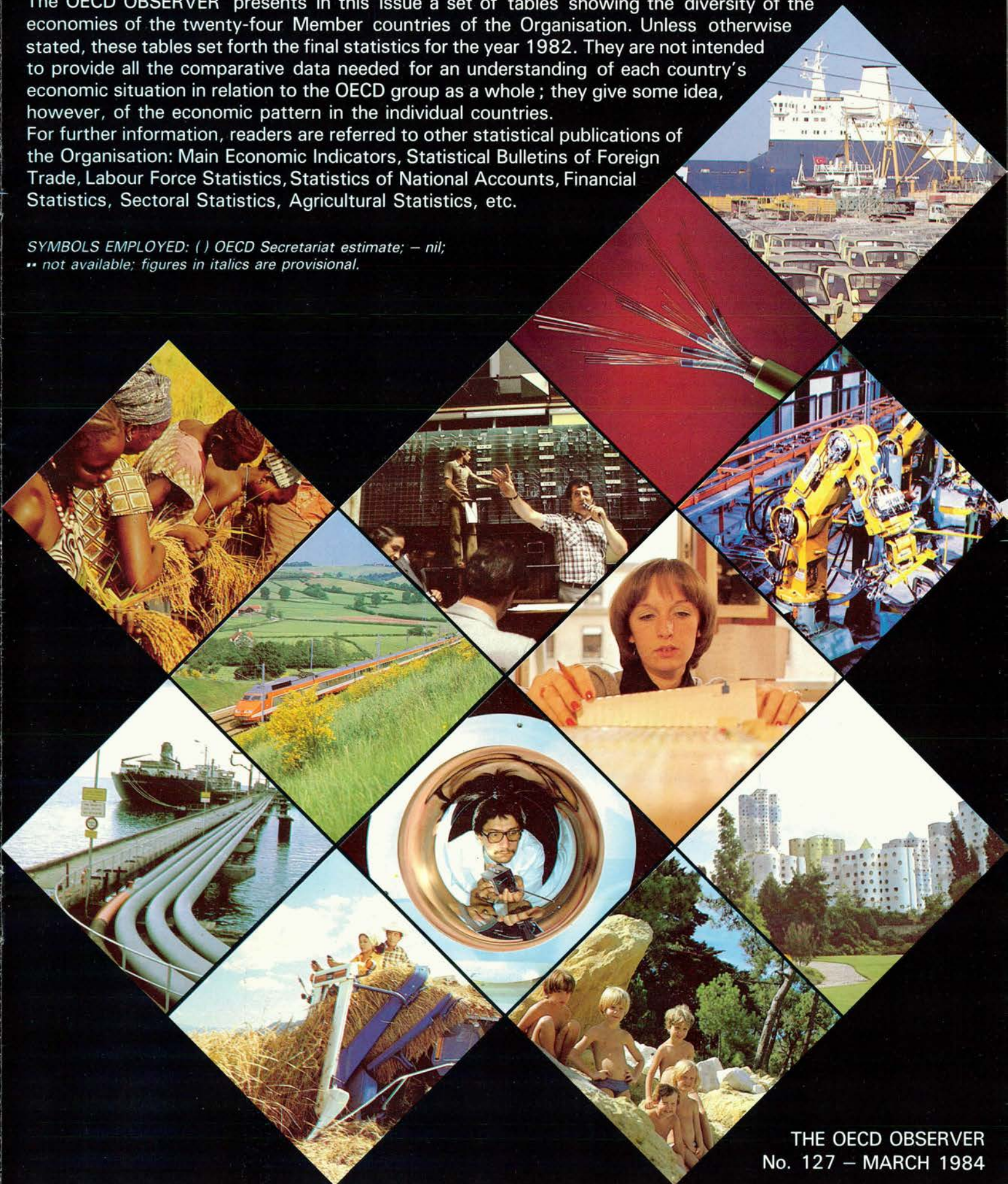
The OECD Member Countries

1984 Edition – 20th year

The OECD OBSERVER presents in this issue a set of tables showing the diversity of the economies of the twenty-four Member countries of the Organisation. Unless otherwise stated, these tables set forth the final statistics for the year 1982. They are not intended to provide all the comparative data needed for an understanding of each country's economic situation in relation to the OECD group as a whole; they give some idea, however, of the economic pattern in the individual countries.

For further information, readers are referred to other statistical publications of the Organisation: Main Economic Indicators, Statistical Bulletins of Foreign Trade, Labour Force Statistics, Statistics of National Accounts, Financial Statistics, Sectoral Statistics, Agricultural Statistics, etc.

*SYMBOLS EMPLOYED: () OECD Secretariat estimate; – nil;
** not available; figures in italics are provisional.*



Because of frequent statistical revisions, figures may be noticeably different from those published in the preceding 'OECD Member Countries'.

a) Standardised unemployment rates.

	AREA	AGRI-CULTURAL AREA	TILLAGE
	1,000 sq. km	1,000 sq. km	1,000 sq. km
AUSTRALIA	7,686.8	4,990	433.0
AUSTRIA	83.9	37	16.5
BELGIUM	30.5	16	8.7
CANADA	9,976.1	701	461.2
DENMARK	43.1	29	26.5
FINLAND	337.0	25	23.8
FRANCE	549.1	315	186.6
GERMANY	248.6	122	74.8
GREECE	132.0	92	39.3
ICELAND	103.0	23	0.1
IRELAND	70.3	58	9.7
ITALY	301.2	176	124.2
JAPAN	372.3	54	48.5
LUXEMBOURG	2.6	1	0.6
NETHERLANDS	41.5	20	8.7
NEW ZEALAND	269.1	146	4.5
NORWAY	324.2	9	8.3
PORTUGAL	92.1	41	35.5
SPAIN	504.8	312	204.9
SWEDEN	450.0	37	29.6
SWITZERLAND	41.3	20	4.1
TURKEY	780.6	381	284.9
UNITED KINGDOM	244.0	183	69.8
UNITED STATES	9,363.1	4,282	1,906.2

POPULATION		CRUDE BIRTH RATES
thousands	per sq. km		per thousand
15,178	2	15.8
7,571	90	12.5
9,856	323	12.2
24,659	2	15.1
5,119	119	10.3
4,826	14	13.7
54,219	99	14.7
61,638	248	10.1
9,792	74	14.3
234	2	18.5
3,483	50	20.3
56,639	188	10.9
118,440	318	12.9
366	141	11.8
14,310	345	12.0
3,183	12	15.7
4,116	13	12.4
10,030	109	15.4
37,935	75	13.4
8,328	19	11.2
6,467	157	11.6
46,788	60	(32.8)
56,341	231	12.8
232,057	25	16.0

TOTAL LABOUR FORCE			UNEMPLOYMENT RATE	
thousands	of which:	Female Labour Participation Rate	as % of total labour force	
	Females		1982	1983
	%	%		
6,935	36.8	52.0	^(a) 7.1	^(a) 9.8
3,304	38.7	50.8	^(a) 3.5	..
4,180	38.2	48.7 1981	^(a) 13.1	^(a) 14.5
11,954	40.9	58.4	^(a) 10.9	^(a) 11.8
(2,689)	44.9	71.8 1981	(11.0)	..
2,556	46.9	72.8	^(a) 5.8	..
23,431	39.3	52.0	^(a) 8.0	^(a) 8.1
27,455	38.1	49.8	^(a) 6.1	^(a) 7.6
3,707	31.5	(34.7)	5.8	..
(110)	(31.4)	46.8 1981	(0.6)	..
(1,283)	(28.8)	35.0 1981	(10.7)	..
23,188	33.8	(40.7)	^(a) 8.9	^(a) 9.7
57,740	39.0	(55.0)	^(a) 2.4	^(a) 2.6
161	(29.8)	39.1 1981	1.2	..
5,748	33.4	35.2 1981	^(a) 11.4	^(a) 13.7
1,332	34.3	45.8 1981	3.5	..
1,998	42.2	(65.4)	^(a) 2.6	^(a) 3.3
4,356	41.5	57.4 1981	7.3	..
13,584	29.5	(33.0)	^(a) 15.9	^(a) 17.4
4,357	46.2	(74.6)	^(a) 3.1	^(a) 3.5
3,046	35.3	(49.8)	0.4	..
(18,581)	(33.9)	49.4 1981	(17.7)	..
26,556	38.8 1981	56.5	^(a) 12.4	^(a) 13.2
111,872	42.4	61.4	^(a) 9.5	^(a) 9.5

TOTAL CIVILIAN EMPLOYMENT			
thousands	AGRICULTURE FORESTRY AND FISHING	of which:	
		INDUSTRY	SERVICES
	%	%	%
6,376	6.5	29.8	63.7
3,189	10.0	40.0	50.0
3,620	3.0	32.3	64.7
10,574	5.3	26.5	68.2
(2,364)	(7.5)	(28.5)	(64.0)
2,367	13.2	33.8	53.0
20,982	8.3	34.6	57.1
25,090	5.5	42.7	51.8
3,491	28.9	29.2	41.9
(110)	(11.2)	(37.1)	(51.7)
(1,131)	(17.3)	(31.1)	(51.6)
20,542	12.4	37.0	50.6
56,380	9.7	34.9	55.4
160 1981	5.6 1981	38.1 1981	56.3 1981
4,984	5.0	28.7	66.3
1,274	11.5	32.9	55.6
1,946	8.0	29.4	62.6
3,959	25.9	37.1	37.0
10,876	18.3	33.9	47.8
4,219	5.6	30.3	64.1
3,033	7.1	38.4	54.5
(14,792)	(59.6)	(16.5)	(23.9)
23,462	2.7	34.4	62.9
99,526	3.6	28.4	68.0

Notes: a) Natural sciences and engineering only. BLEU: Belgium-Luxembourg Economic Union.			AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND	IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
			at current prices and exchange rates billion US \$	1983	150.5	67.4	81.5	326.9	56.0	47.8	514.9	657.7	36.4	2.3	17.7	355.1	1,157.0	3.2	133.3	22.2	55.0	20.5	159.4	91.6	98.2	53.3	449.2	3,281.6
	1982	157.41	66.89	84.29	298.05	56.39	49.10	540.09	658.99	38.36	2.64	17.63	347.35	1,061.92	3.34	137.59	23.83	56.18	23.38	181.25	99.16	96.54	52.98	477.38	3,041.36	
GROSS DOMESTIC PRODUCT at market prices	average annual volume change	1977-82 %	2.4	1.8	1.8	1.6	1.6	4.0	2.0	1.6	2.3	2.6	3.1	2.2	4.5	1.4	0.6	1.1	2.7	3.6	1.0	1.4	1.5	2.2	0.8	1.5
		1982-83 %	(-1.25)	(1.0)	(0.0)	(3.0)	(1.75)	(2.75)	(0.5)	(1.25)	(0.0)	(-5.75)	(0.5)	(-1.5)	(3.0)	(-2.5)	(1.25)	(-0.5)	(1.5)	(0.25)	(2.0)	(1.75)	(0.0)	(3.0)	(2.5)	(3.5)
	per capita at current prices in US \$ using current exchange rates		10,371	8,835	8,552	12,104	11,017	10,175	9,961	10,691	3,917	11,265	5,062	6,133	8,966	9,137	9,615	7,520	13,648	2,338	4,778	11,907	14,928	1,132	8,523	13,106
	per capita at current prices in US \$ using purchasing power parities (PPP)		..	9,852	10,293	..	10,968	..	10,747	10,880	5,410	..	6,166	8,520	10,589	10,746	9,858	..	..	4,552	6,870	..	..	..	9,095	13,106
FINAL PRIVATE CONSUMPTION EXPENDITURE % of GDP at current prices			61.4	56.1	65.8	56.5	55.1	55.5	64.8	56.2	65.1	63.9	60.2	62.1	58.7	60.7	60.5	61.1	48.6	68.5	69.8	53.9	62.4	71.9	60.7	66.0
CURRENT GOVERNMENT EXPENDITURE AND REVENUE	current disbursements % of GDP	1981-82	31.1	44.0	53.3	42.2	56.7	37.3	47.5	44.8	36.0	27.6	48.3	48.5	26.5	45.7	58.3	..	45.5	33.2	30.3	60.3	28.1	..	44.6	34.2
	current revenue % of GDP	1981-82	34.4	47.4	45.4	38.5	50.5	39.8	46.9	45.3	30.4	36.0	41.7	41.5	29.3	51.5	55.8	..	52.6	37.5	30.6	59.0	32.6	..	43.4	33.7
GROSS FIXED CAPITAL FORMATION private and public	total % of GDP at current prices		24.9	23.1	17.3	21.1	16.5	24.0	20.5	20.5	19.1	25.6	25.5	19.0	29.6	23.4	18.3	22.9	24.6	31.2	19.6	18.8	23.1	19.1	15.4	16.6
	machinery and equipment % of GDP at current prices	1981-82	12.4	10.4	5.8	7.6	7.4	9.4	9.1	8.2	8.0	6.9	13.1	7.7	10.5	9.2	7.1	9.1	8.7	13.7	6.9	7.2	6.9	5.2	7.6	8.1
NET NATIONAL SAVINGS RATIO % of GDP			12.2	12.9	4.1	7.0	3.5	9.7	6.7	9.0	10.8	5.0	7.8	8.4	17.4	33.0	10.3	12.4	13.5	17.5	7.8	2.1	17.4	12.9	4.8	2.1
NET OFFICIAL DEVELOPMENT ASSISTANCE to developing countries and multilateral agencies % of GNP			0.57	0.53	0.60	0.42	0.77	0.30	0.75	0.48	..	..	..	0.24	0.29	..	1.08	0.28	0.99	..	..	1.02	0.25	..	0.37	0.27
GROSS DOMESTIC EXPENDITURE ON R & D % of GDP			1.0	..	1.4	1.5	1.1	1.2	2.1	2.5	0.2	0.8	0.7	1.0	2.5	..	1.9	0.9	1.3	0.3	..	(a) 2.2	(2.3)	..	(2.4)	2.7
TRADE BALANCE (goods and services) % of GDP			-3.3	2.3	-1.1	4.0	0.4	0.5	-2.3	2.5	-9.8	-5.0	-7.3	-1.0	1.0	-6.0	3.7	-3.7	5.6	-18.8	-1.6	-0.9	0.4	-3.4	2.3	-1.0
TOTAL OFFICIAL RESERVES million SDR 30.12.1983			8,749	5,042	5,699	4,016	3,515	1,227	22,503	44,099	997	144	2,534	21,538	24,346	5,699	11,253	702	6,373	1,036	7,266	4,065	17,275	1,345	11,496	30,831

BLEU : Belgium-Luxembourg Economic Union.

AUSTRALIA

AUSTRIA

BELGIUM

CANADA

DENMARK

FINLAND

FRANCE

GERMANY

GREECE

ICELAND

CUR-RENCY	monetary unit	Australian Dollar	Schilling	Belgian Franc	Canadian Dollar	Krone	Finnish Mark	French Franc	Deutsche Mark	Drachma	Krona
	units per US \$ 30th December 1983 at market rates	1.12	19.34	55.64	1.24	9.88	5.81	8.35	2.72	98.67	28.67
	units per SDR 30th December 1983	1.17	20.25	58.25	1.30	10.34	6.08	8.74	2.85	103.30	30.02

IMPORTS <i>(goods only)</i>	total (CIF) million US \$	24,141	19,494	57,829 BLEU	54,819	16,842	13,428	115,382	154,049	9,968	943
	from other OECD countries million US \$	17,340	14,969	46,381 BLEU	47,747	14,066	8,535	79,449	115,023	6,397	801
	from rest of world million US \$ (excl. unspecified)	6,713	4,525	11,408 BLEU	7,072	2,775	4,893	35,086	38,900	3,571	142
	total imports as percentage of GDP at current prices	15.3	29.1	66.0 BLEU	18.4	29.9	27.3	21.4	23.4	26.0	35.8
	volume change of total imports from 1977 to 1982 percentage per year	3.4	1.6	1.7 BLEU	-1.3	-0.2	3.9	4.5	3.0	3.2	..

EXPORTS <i>(goods only)</i>	total (fob) million US \$	22,077	15,643	52,406 BLEU	68,414	15,317	13,070	92,351	175,456	4,285	686
	to other OECD countries million US \$	12,622	11,096	44,297 BLEU	58,361	12,577	7,977	62,855	131,929	2,592	587
	to rest of world million US \$ (excl. unspecified)	8,744	4,547	7,573 BLEU	10,054	2,717	5,093	29,455	42,849	1,689	100
	total export as percentage of GDP at current prices	14.0	23.4	59.8 BLEU	23.0	27.2	26.6	17.1	26.6	11.2	26.0
	volume change of total exports from 1977 to 1982 percentage per year	2.9	5.5	2.6 BLEU	2.6	5.8	5.3	3.5	4.6	2.6	..

CON-SUMER PRICES	increase 1983 % (Dec. 82-Dec. 83)	8.6	3.8	7.2	4.5	6.0	8.3	9.3	2.6	20.0	84.3
	average annual increase 1978-1983 % per year	10.0	5.1	7.0	9.7	10.1	9.8	11.8	4.8	21.9	57.1

INDUSTRIAL PRODUCTION CHANGE 1983 (Dec. 82-Dec. 83)	4.1 Nov.	3.0 Nov.	7.0 Nov.	16.1 Nov.	..	6.5 Nov.	4.0	8.2	1.1 Oct.	..
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INTERNA-TIONAL TOURISM	receipts as % of GDP	0.2	7.5	1.8 BLEU	1.0	2.3	1.2	1.3	0.8	4.0	1.0
	expenditure as % of final private consumption	1.1	6.0	3.8 BLEU	2.4	4.3	2.3	1.5	4.4	1.5	4.4

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
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Irish Pound	Lira	Yen	Luxembourg Franc	Guilder	New Zealand Dollar	Krone	Escudo	Peseta	Krona	Swiss Franc	Turkish Pound	Pound	Dollar
0.88	1,659.50	232.20	55.64	3.06	1.53	7.74	131.65	156.70	8.00	2.18	252.50 31 oct.	0.69	1.00
0.92	1,737.41	243.10	58.40	3.21	1.60	8.11	137.83	164.06	8.38	2.28	264.36 31 oct.	0.72	1.05

9,688	85,923	131,123	57,829 BLEU	62,586	5,789	15,452	9,425	31,615	27,620	28,597	8,940	99,675	243,952
8,980	51,767	46,327	46,381 BLEU	46,403	..	13,612	6,528	17,223	22,520	24,593	4,454	79,363	139,253
653	34,143	84,792	11,408 BLEU	16,181	..	1,840	2,862	14,362	5,100	4,004	4,486	20,117	104,697
55.0	24.7	12.3	66.0 BLEU	45.5	24.3	27.5	40.3	17.4	27.9	29.6	16.9	20.9	8.0
4.3	3.0	1.6	1.7 BLEU	0.4	2.8	1.7	..	..	1.9	4.4	-4.4	2.3	-0.3

8,089	73,379	138,255	52,406 BLEU	66,231	5,554	17,545	4,177	20,574	26,737	25,936	5,766	97,221	212,275
7,055	49,049	66,445	44,297 BLEU	56,099	..	15,618	3,416	12,677	21,390	18,726	2,577	70,080	119,631
929	23,354	71,810	7 573 BLEU	8,875	..	1,927	674	7,696	5,347	7,211	3,189	26,901	92,138
45.9	21.1	13.0	59.8 BLEU	48.1	23.3	31.2	17.9	11.4	27.0	26.9	10.9	20.4	7.0
6.8	3.1	4.8	2.6 BLEU	2.2	3.7	6.4	..	..	3.5	1.8	14.3	1.8	2.9

10.3	12.4	1.8	8.0	3.0	3.6	7.1	33.9	12.2	9.2	2.1	24.6	5.3	3.8
15.8	17.0	4.2	7.4	5.2	13.6	9.8	21.5	14.5	10.1	4.5	49.5	11.2	8.8

3.8 Oct.	-3.2	7.8 Nov.	4.2 Oct.	5.8 Nov.	..	7.3	0.5 Sep.	2.0 Aug.	8.2 Nov.	3.6	16.1
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..	2.4	0.1	1.8 PLEU	1.1	0.9	1.3	3.8	4.0	1.0	4.1	0.7	1.2	0.4
..	0.8	0.7	3.8 BLEU	3.9	1.5	6.5	1.6	0.8	3.6	4.6	0.2	2.2	0.6

INFANT MORTALITY deaths in 1st year per 1,000 live births				AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
				10.0 1981	12.8	11.7	9.6 1981	8.4	6.5 1981	9.3	11.6 1981	14.3 1981	7.7 1980
IRELAND	ITALY	JAPAN	LUXEM- BOURG	NETHER- LANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZER- LAND	TURKEY	UNITED KINGDOM	UNITED STATES
10.6 1981	12.7	6.6	7.2	8.1	11.8	7.5 1981	26.0 1979	10.3 1981	6.8	7.6 1981	..	11.2 1981	11.2

ANIMAL PROTEIN grams per inhabitant and per day 1981				AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
				68	60	64 BLEU	66	72	67	79	68	..	..
IRELAND	ITALY	JAPAN	LUXEM- BOURG	NETHER- LANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZER- LAND	TURKEY	UNITED KINGDOM	UNITED STATES
66	56	37	64 BLEU	64	71	66	39 1977	55	72	70	24	56	72

PUBLIC EXPENDITURE ON EDUCATION 1981 as % of GDP				AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND	
				5.8 1980	5.5 1980	6.5	8.4	6.7 1980	5.7	3.4 1980	4.7 1980	2.2 1979	..	
				of which: associated expenditure ¹	0.2 1980	0.3 1980	0.1	0.5	0.4 1980	1.0	0.2 1980	0.3 1980	0.3 1979	..
IRELAND	ITALY	JAPAN	LUXEM- BOURG	NETHER- LANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZER- LAND	TURKEY	UNITED KINGDOM	UNITED STATES	
6.7 1980	5.0 1979	5.6 1980	7.6	7.8	5.3	8.5 1980	4.3 1980	2.6 1979	9.0	5.1	2.7 1980	5.7 1980	6.9 1980	
0.3 1980	0.1 1979	0.2 1980	..	0.3	0.3	0.3 1980	0.3 1980	0.1 1979	1.3	0.1	..	0.8 1980	0.4 1980	

1. Boarding, catering, transport, medical care, welfare and financial aid to students.

TAKE HOME PAY (after tax and soc. sec. contr.) as % of gross earnings ¹				AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND	
				family benefits: excl.	82.7	76.9	76.3	86.7	62.5	73.0	86.4	73.0	80.4	..
				incl.	86.1	92.4	88.7	89.6	65.6	78.5	93.5	78.0	80.4	..
IRELAND	ITALY	JAPAN	LUXEM- BOURG	NETHER- LANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN ²	SWEDEN	SWITZER- LAND	TURKEY	UNITED KINGDOM	UNITED STATES	
79.2	79.6	88.5	85.6	64.5	74.0	73.6	83.5	87.1	65.0	80.9	..	71.1	79.1	
82.4	85.7	88.5	93.7	72.2	77.9	80.7	87.7	88.4	72.1	85.1	..	78.7	79.1	

1. Average earnings in manufacturing: one-earner family, 2 children. 2. 2-1981.

ENERGY CONSUMPTION (per capita) total primary energy requirements in tons of oil equivalent				AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
				5.20	3.41	4.23	8.81	3.44	5.37	3.41	4.13	1.62	5.79
IRELAND	ITALY	JAPAN	LUXEM- BOURG ¹	NETHER- LANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZER- LAND	TURKEY	UNITED KINGDOM	UNITED STATES
2.48	2.38	2.90	8.50	3.91	3.59	5.78	1.22	1.95	5.62	3.79	0.78	3.51	7.54

1. 70 per cent of total energy requirements (more than double the OECD average) are consumed by the industry sector mainly for export.

TELEPHONES number per 1,000 inhabitants				AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
				540	440	401	694 1981	703	546	541	509	317	497
IRELAND	ITALY	JAPAN	LUXEM- BOURG	NETHER- LANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZER- LAND	TURKEY	UNITED KINGDOM	UNITED STATES
223	382	520	547 1979	560	608	535	155	337	856	770	53	517	760

TELEVISION SETS number per 1,000 inhabitants 1981				AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE ¹	GERMANY	GREECE	ICELAND
				L	298	300	—	364	336	297	348	160	288
				R	380	..	489	..	414	361	..	..	..
IRELAND	ITALY	JAPAN	LUXEM- BOURG	NETHER- LANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZER- LAND	TURKEY	UNITED KINGDOM	UNITED STATES
181	234 1980	252	—	301	—	298	144	—	387	314 1980	101	331 1980	—
241	390	551	250	..	285	..	..	254	..	365	110	411	631

L = licences issued or sets declared R = estimated receivers in use. 1. 1980.

The Longer-Term Performance of OECD Economies : Challenges Facing Governments

In an effort to gain a better perspective on today's problems, OECD Economic and Finance Ministers met recently to examine informally how economic policies affect the structure, and hence the longer-term performance of OECD economies. High unemployment and rising public sector debt set the context in which economies must be able to adjust to rapid – but uncertain – changes in technology and trade. Four features of economic structure are likely to encourage successful adaptation: a stable and non-inflationary policy environment; sufficient flexibility to maintain both efficiency and high employment in the provision of public and private goods and services; an open world system of trade and finance to increase and distribute the gains from new technologies; and a high degree of social consensus. The latter is not only good in its own right, but is necessary to maintain economic flexibility and political stability.

There are two compelling reasons why now is the right time to bring these issues to the fore. First, the experience of the 1970s – the "school of hard shocks" – has amply shown that sustained improvement in living standards requires not only a continuing adaptation to continuous change, but also the flexibility to adjust to sudden shocks, nationally and internationally. Second, many government programmes and policies are already in the process of being cut back, reformed, or replaced, under the twin pressures of budgetary imperatives and structural change.

Thus, the time is ripe for trying to approach a wide range of policy issues in a consistent way, to ensure that government cutbacks are well placed, and that policies and programmes are

coherent in their approach to government, to the private sector, and to the world economy. Both market and governmental processes are prone to failure in some degree because they have to deal with an uncertain future. Perhaps the most basic challenge for governments is to find ways to harness political and economic forces to produce social and economic structures robust enough to cope satisfactorily with a rapidly changing environment.

For the public sector, the challenge is to limit and scale down the costs of public services, and to maintain a stable policy environment, while improving the ability to achieve social and economic objectives. For the private sector, which in this context comprises all business enterprises – including those owned or regulated by governments – the challenge is to achieve and maintain enough flexibility to ensure that changes are seen as opportunities rather than threats. These objectives are mutually reinforcing, since a stable and efficient public sector makes less claim on the resources of the private sector, helping to reduce costs and maintain incentives to work, to save, to invest, and to innovate. Similarly, a more flexible and innovative private sector generates jobs and investment more robustly, lessening the transfer load and financing requirements of the public sector.

A national economy that is flexible and efficient stands to gain more from the changing opportunities offered by open world markets, and is likely to have a bigger stake in improving the international framework for trade and investment. In the reverse direction, economies that are more open to world markets need to be capable of absorbing inevitable shocks. If this is well understood, then domestic political forces are more likely to embrace adaptability, and to reject rigidity. Flexibility and openness are thus mutually reinforcing. But they are also threatened in the same way when things go wrong. Political forces, policies or administrative structures that reduce flexibility, whether of domestic or world markets, reduce the benefits which the open system can bring and vice versa.

Consistent domestic policies to improve responsiveness require a high degree of consensus if they are to work. Consensus requires the costs of change to be shared in a manner that is widely perceived to be equitable. This in turn requires, among other things, the maintenance of the basic "safety net" policies of the welfare state.

It is against this background that Ministers focussed on three more specific themes: pressures in the public sector (under the chairmanship of John S. Dawkins, Australian Finance Minister; an article on this subject appears on page 32); living with change – flexibility and efficiency in the private sector (Kjell-Olof Feldt, Swedish Finance Minister); national policies and the international framework (Dr. Otto Lambsdorff, Economics Minister, Germany). Jacques Delors, Minister of Finance, the Economy and the Budget of France, chaired the closing session. The Ministers heard a report on the Intergovernmental Conference on Employment Growth in the Context of Structural Change (see following page).



Structural Unemployment: Policies for Job Creation

With more than 30 million unemployed in the OECD area and only a slight decrease foreseen despite the recovery, structural unemployment is a matter of concern for all OECD countries, even those with better than average performance. New responses are necessary, and a recent OECD conference explicitly challenged governments, employers and trade unions to develop structural employment policies that, in conjunction with appropriate macro-economic policies, might lead to a more acceptable labour market outlook for the years ahead.

Economic recovery is now underway in the OECD area, though its strength and speed vary from country to country. Growth is strongest in North America, followed by the Pacific countries and Europe. Even if the recovery persists and strengthens, there is growing recognition that economic growth alone is unlikely to restore acceptable levels of employment or substantially reduce unemployment in the foreseeable future. The prolonged recession has not only left the largest pool of unemployed job-seekers for several decades but seems to have weakened the longer-term employment-generating capacity of many OECD countries, particularly in Europe.

This new situation calls for a profound change in ways of thinking, in attitudes and policies. In the 1950s and 1960s, the primary role of labour-market policies was to adjust the supply of manpower so that it could be moved to the growth sectors of the economy. During the recession, with high levels of unemployment falling disproportionately on certain groups in society – especially young people, migrants and women – labour-market and manpower policies took on the defensive role of protecting these groups and trying to create jobs for them. Today, with widespread recovery a real possibility, there remain structural problems, and the thrust of manpower policy needs to shift again. What is needed now is a positive strategy for creating jobs in the context of structural change – structural employment policies.

This change implies the participation of all those whose actions affect the level of employment – government, employers and trade unions.

Structural Change – Not a Threat but an Opportunity

Structural change is a shift in the basic relationships within the labour market and within the economy. Several aspects of this change were discussed at a recent OECD Conference, first of all the introduction of new technologies as a source of change. At a time of little employment and growth, the question is whether such change will lead to jobless growth. A second aspect of structural change is the shift in trade patterns which has a greater impact on certain occupations, sectors of the economy and regions than on others. A third is the evolution of industrial structures – towards or away from labour-intensive industries, towards the service sector, from the private to the public sector or vice versa. Among the questions that arise in this context are whether the shift to the service sector will take new forms and whether these offer hope of increased employment; what the role of the public sector in employment creation should be, and whether employment in the sector which falls between public and private enterprise (what is often called the third sector but could more appropriately be termed the “in-between” sector) is likely to increase. A fourth and final aspect is the

reduction and redistribution of working time. Does it offer a meaningful way of adjusting to technological change and productivity growth? Can it increase employment in the current economic situation?

If employment is to be maximised in the face of structural change, such change needs to be embraced rather than resisted, exploited rather than shunned. But this is easier said than done. Although well-implemented policies for positive adjustment (determined by the free play of market forces, with government involvement playing only a complementary role) might facilitate the simultaneous attainment of social and economic objectives in the longer term, in the shorter term, costs of adjustment may drive a wedge between social and economic aims through the imposition of unacceptable costs on those

“We in Europe are constantly worried about change and indeed we should not hide the fact that it is painful. Yet change is a dynamic force which we should welcome. We can anticipate it through training, industrial participation and by greater encouragement of mobility. We can temper change, but to resist it would be to compromise our future. We should be careful lest, by support of old and ailing industries, we destroy new opportunities and new jobs in new industries. The change is painful, not to change is terminal.”

John Gummer,
Minister of State, Department of
Employment, United Kingdom.

“Our experience in the United States over the last decade leads us to the conclusion that there is no substitute for a dynamic economy that relies on the market to allocate resources. It can absorb workers in “declining” industries and people entering the labour force. A flexible economy is able to adapt to changes brought by new technology and trade. And the record of such economies in creating new jobs speaks for itself.”

Roger B. Porter,
Deputy Assistant for Policy Development to
the President of the United States.

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There are jobs associated with the new technologies but with very different qualifications than those that are disappearing.

who must adapt to change. The realistic course – and the most human one as well – is to assure those who bear the burden of adjustment – both workers and firms – of adequate support. Since the society as a whole benefits from structural adjustment while only a minority suffers, the losers should be assisted. Moreover, if firms and workers understand that they will not have to bear the full burden of adjustment, they are less likely to resist it. One must be sure however that, in the process, the workings of the market are distorted as little as possible.

Flexibility of the Labour Market

The greater the flexibility of the labour market, the lower the economic costs of adjustment: there will be less unemployment and less loss of output. Standard microeconomic theory postulates that, in a perfectly free labour market, wages and employment adjust to rectify imbalances between supply and demand. In the real

world, however, there are obstacles to adjustment: these make relevant policies that not only assist those most affected but promote the flexibility of salary structures and the adjustment of manpower.

First, *wage responsiveness* to changed supply and demand conditions is limited in many countries. Collectively bargained wage agreements may not readily allow for wage differentials between workers in a given occupation who work in different industries and firms. There may also be strong resistance to changing differentials between occupations. Thus a potentially important factor which could encourage adjustment is out of reach: the financial incentive provided by changes in wage differentials, which could encourage the workforce to move to new industries and occupations and induce employers to adjust their inputs and output. Since this incentive is lacking, workers' capacity to respond to shifts in relative wages by changing industry or occupation may be limited.

But the concept of labour market flexi-

"We cannot get acceptance of flexibility from workers if they feel that the burden of change is unjustly distributed."

Anna-Greta Leijon,
Minister of Labour, Sweden.

bility goes well beyond that of wage flexibility alone. *Manpower adjustment policies* – modifying social legislation, improving occupational and geographical mobility, training and retraining workers and preparing them for change, whatever form it takes – can make an important contribution to labour market flexibility.

The Dimensions of Change

Managing the impact of new technologies ...

Technological progress has always been an engine of economic growth. But each major technological innovation also requires a prolonged process of social and economic adaptation, and the transition phase always spawns hardship. But, in recent years, fears have been exacerbated by poor macro-economic performance and the qualitative differences in the nature of structural change from those of the past.

A *sine qua non* for action to allay these fears is cooperation between governments, business and unions. A first step is to develop an early warning system – a flow of information about the planned introduction of new technologies. Such information is necessary if the workers are to prepare themselves for change. It must be available at plant level and be accompanied by consultations at the earliest stages, when

"The prime cause of today's fear of the new technologies is their element of mystery. Social partners and governments alike must work to dispel that fear."

Dr. Rudolf Miller,
Director of International Affairs,
Federal Ministry of Labour and Social Affairs,
Germany.

"The way to speed the introduction of new technology is not by confrontation. It is by taking workers and their unions into the discussion of any change in technology and reaching agreement by consent."

David Basnett,
President of OECD's Trade Union Advisory
Committee (TUAC).

"Much of the information that others might regard as proprietary is shared with the trade unions and workers who participate in the crucial stages of corporate planning in Japan. This sharing is based on our confidence in their integrity."

Yotaro Kobayashi,
President of Fuji-Xerox Co., Japan



If workers are to adapt to the new technological culture, education must be completely reoriented.

the type and pace of technological change are being planned.

These changes go hand in hand with the upgrading, training and retraining of the labour force. If workers are to adapt to the new technological culture, the education system needs reorientation. Since skill needs are difficult to forecast, there is a premium on more flexible types of training and education, and the idea of "generic" training is one credible approach. Training older workers must be given priority if the obsolescence of their skills is to be avoided. Large firms can rely on internal labour markets (retraining and transfer within the firm) but small firms may need government assistance. While training ensures a flexible response, it cannot by itself ensure either economic growth or the creation of new jobs without the other key ingredient – investment.

... and new patterns of international trade

There is widespread agreement that the new wave of protectionism which threatens the viability of the open trading system jeopardises the chances of achieving more satisfactory employment growth.

The ebb and flow of comparative advantage is a political and economic reality which, together with the high level of unemployment – and the short-term costs of adjustment – puts strong pressures on governments to take protectionist measures to brake the adjustment process.

But the longer-term costs of protectionism – lower real output and employ-

ment – may well be higher than the short-run costs involved in adapting industry and labour markets to changes in trade patterns. The question of compensation and adjustment assistance for those bearing the burden of structural change is obviously relevant in this context: changing trade patterns involve both gains and losses, but the latter are often highly concentrated on specific regions and sectors and hence very visible. Thus it is important to try to establish some clear ground rules to guide the public authorities in helping workers who are adversely affected.

First, if adjustment-assistance programmes are to be successfully used in coping with structural change, they should place less stress on cash benefits and more on supplying displaced workers with services such as retraining and counselling, job placement and aid to geographical mobility. Second, since trade changes may have a strong impact on declining regions, the approach should be carefully tailored to the needs of the community. Finally, closer cooperation and consultation between labour and management must be forged at the plant level so as to encourage both parties to assume greater responsibility for manpower adjustment.

"Protectionism does not solve the unemployment problem. More job losses are due to protectionism than the other way around."

Francis Blanchard,
Director-General, International Labour
Office (ILO).

"Open trade policy which fosters international economic growth should not be sacrificed for the short-term benefits of protecting employment in declining industries. We see structural adjustment as a prerequisite for international comparative advantage."

Dr. Mustafa Kalemli,
Minister of Labour and Social Security,
Turkey.

"Whether needed because of trade repercussions or technological change, adjustment should be fostered by an active labour-market policy based not on cash but on a work strategy: efficient nation-wide employment services using top techniques; occupational mobility through training; geographical mobility; support to new viable industries. Switching from a cash assistance strategy to a work strategy strengthens free trade."

Allan Larsson,
Director General, National Labour Market
Board, Sweden.

"Customs duties and physical restrictions are unfortunately but one aspect of the impediments placed in the way of international trade, and possibly not the most important. I do not think that one can disregard the effects of world monetary disorder as a reason for the declining momentum of world trade. For fifteen years now, the instability of currencies has considerably disrupted trade flows, the relative prices that determine business competitiveness depending more often on currency movements than on actual differences in productivity."

Pierre Bérégovoy,
Minister for Social Affairs and National
Solidarity, France.



Imports also create jobs – not only directly but because they permit an expansion of the world trading system and hence of exports.

Changing Industrial Structures

The potential of government investment in infrastructure

Public investment in infrastructure has declined sharply in many countries as a result of recent restrictive budgetary policies. But judiciously chosen investments can play a stimulating role in employment creation in the private sector without permanently taxing the government budget. There is a great need for the renovation of existing infrastructure and the creation of new facilities. But how should such investment be financed in view of budget deficits and possible inflationary effects? Obviously

“A clear distinction has to be made between direct public investment and encouragement of private investment connected with public programmes. In the case of direct public investment, the permanent employment created is usually in the public sector and puts additional and recurring pressure on public current expenditure. By contrast, public incentives for certain types of expenditure, such as housing, do not lead to permanent employment, but the cyclical stimulus to labour demand is considerable.”

Joaquin Almunia,
Minister of Labour and Social Security, Spain.

“To the traditional question – how can public investment be financed in the present context – the obvious counter question is: how can an increase in unemployment be financed?”

John Evans,
European Trade Union Institute, Brussels.

the room for manoeuvre differs from country to country but, apart from the classic solution – recourse to the government budget, which is difficult in a period of public expenditure restraint – other approaches are possible including user fees, recourse to insurance or pension funds and borrowing from non-government sources.

Finally, public investment ought to be complementary to and call forth private investment, especially on the part of small and medium-sized firms whose employment-creating capacity is decisive.

The in-between sector

What role can the public and private

“We must not fear what is new. The moment one mentions new forms of work organisation and production – for example in the in-between sector – someone comes back with the objection that this will create a dual society. My answer is that the dual society is already upon us and, if nothing is done, it can only become more pronounced. There is a gap between those who have job security and those who do not; between those who are in old, declining industries and those who are in new dynamic ones; between those who, if they lose their job, are likely to find another one and those who are not. That is why real flexibility – flexibility which creates jobs – means opening the doors to social and economic innovation and not systematically opposing it.”

Jacques Delors,
Minister of Finance, the Economy and the Budget, France.

sectors play in promoting initiatives in the in-between sector. Despite difficulties in defining and delimiting this sector, the many initiatives that have been taken bear witness to a spirit of enterprise, innovation and creation as well as to a potential for employment generation that may herald a new way of satisfying needs and a new style of development.

In many OECD countries, governments, and especially local authorities, try to encourage such initiatives, by modifying regulations that hamper or relegate them to the hidden economy. The private sector – and large firms in particular – sometimes support them actively. However, these initiatives, which offer an opportunity for fruitful cooperation between the public and private sectors and between government and the social partners, often suffer from serious financing difficulties. Some novel solutions (start-up subsidies, allocation of unemployment benefit resources, public orders, workers' funds) warrant further attention. Implicit in such schemes, however, is the danger of a dual economy or an increased fragmentation of society, although some have argued that fear of such consequences should not prevent action.

... and the adjustment of working time

One important aspect of the long-term social and economic development of OECD countries has been the adjustment of working time – whether through a reduction in the normal work week, a shorter work life (later entry into the labour force or early retirement) or a greater variety of work schedules. For several years now, interest in this matter has heightened because of its job-creating and unemployment-diminishing potential. But not everyone considers this approach to be a valid one, and some observers do not think that reductions in working time can have any positive effect on employment. Those who see the matter in a more positive light believe that, although the public authorities can help, collective bargaining must be the principal mechanism for introducing such adjustments. However, negotiations in this field are currently at a stalemate in some countries. Workers who are uncertain as to whether they will have a job next month, or who fear having their savings eroded by inflation, often resist trading off income gains for leisure while employers have not been willing to embrace changes in working time which they feel will increase their costs. Perhaps the deadlock between the social partners would become less acute if the reduction in working time were accompanied by more flexible working schedules permitting more efficient use of capital equipment and giving workers and management more freedom to modify labour input over the course of the day, the week,

"We must not introduce new rigidities through a reduction in working hours. Government policy should at the most be permissive in this field and let the social partners negotiate."

Graham Reid,
Under-Secretary, Manpower Services
Commission, United Kingdom.

"Structural policies to strengthen or regenerate the capacity of our economies to create new jobs should cover a broad range of action. Such policies must be built upon:

- *confidence in the future, restored by a steady macroeconomic and collective bargaining environment, which will stimulate the formation of both physical and human capital*
- *consensus about the basic goals and values to be achieved or maintained*
- *an equitable sharing of the costs of adjustment.*

Emile van Lennep,
OECD's Secretary General.

the month and the year. This question merits further exploration, given the central role of the social partners and collective bargaining in the determination of working time.

*
* *

In all of the discussions at OECD's conference, one matter drew a clear consensus: it is impossible to bring about a strong recovery of employment through labour-market policies alone; there must be a healthy and stable macro-economic environment. But, by the same token, macro-economic growth alone cannot remedy outstanding structural problems. A vigorous and effective structural employment policy is needed to improve and sustain the growth performance of the economy.

With the developments of the last decade, it is becoming evident that basic changes are taking place in the functioning of labour markets and in the role of work in society. The dividing lines between working time and leisure, between those in the labour force and those outside it, between the self-employed and employees, and between primary, secondary and tertiary activities are beginning to blur. And those outside the labour force who are the main clients of the welfare state (the retired, the unemployed, the handicapped and the poor) but also people who are supported by their families (married women who do not work and young people) seem to be striving towards some activity which, not only increases their incomes but also permits them to play a more active role in society. This trend seems to be a lasting one, and future labour market policies have to be designed to accommodate these social changes.

Big Government: Is It Too Big ?

by Peter Saunders¹

In the two decades after World War II, the positive contribution an expanding public sector could make to promote sustained economic growth and rising living standards was widely acknowledged. It could provide economic and social infrastructure through public capital works programmes and raise community well-being and productivity through enhancement of health and education services. More explicit forms of income redistribution were designed to ensure social equity and greater political stability. These developments were consistent with prevailing views on the importance of public expenditure and tax policies in ensuring that economic activity remained close to its full employment level. The result was a rapid increase in the ratio of total public expenditure as a percentage of GDP in all OECD economies².

Towards the end of the Sixties however, and increasingly through the Seventies, this optimism about the economic and social benefits of public expenditure growth was challenged. On one level, the ability of policy makers to ensure macro-economic stability via fine-tuning of public spending and tax levels was seriously questioned. Further, as the ratio of public expenditure to GDP exceeds 50 per cent in an increasing number of OECD economies, a more fundamental question is being posed: has the appropriate balance between the public and private sectors been exceeded to the point where public sector expansion is now taking place at the expense of private-sector performance rather than contributing to it? To put the same point somewhat differently: are the benefits from additional public spending no longer in excess of the costs associated with its provision?

Many different arguments have been proposed which imply an affirmative answer to this question. Government growth – including the expansion of regulatory activity – came to be seen as impeding entrepreneurial initiative and the role of competitive forces in ensuring suffi-

cient economic flexibility in the face of a continually changing economic environment. Generous income support benefits on the one hand and high levels of taxation on the other were thought to have undermined the work ethic, reduced labour supply and savings. In addition, government programmes were seen as encroaching into areas best left to individuals themselves, simultaneously reducing consumer choice and necessitating further tax increases.

Some of these assertions are easier to check against actual experience than others, although few of them are simple to either confirm or refute categorically. Many of them have received much attention from economists, with the result that an enormous, complex and ever-expanding body of literature has been produced. It is not possible to do full justice to this work in the space of this article. What follows is an attempt to review the essentials of the available evidence on both the achievements and the adverse consequences of public sector activity.

A natural starting point for any such review is the broad macroeconomic background of the last two decades. Focusing in particular on economic growth performance, the chart suggests that an inverse relationship existed, prior to the first oil shock in 1973, between the rate of economic growth and the share of government current spending in GDP³. No such relationship is apparent however for the period from 1974 to 1981. Evidence – or lack of it – on the relationship between two economic variables does not of itself establish any causal link between them. There are

1. *Growth Studies Division, OECD Economics and Statistics Department.*

2. *For more information on the pattern of public expenditure growth, see "Big Government - How Big is It?", OECD Observer, No. 121, March 1983.*

3. *Government current spending includes expenditure on goods and services (final consumption), interest on public debt, subsidies and social security and other transfers.*

many influences on a country's economic growth rate, and since these will vary in size and importance from country to country, they will distort simple relationships like those in the chart to the point where they may be positively misleading. Assessment of the impact of public sector size and growth on economic performance must take account of the institutions and stage of development of each individual country.

Achievements ...

In many areas of public sector activity, it is extremely difficult to produce quantifiable measures of achievement. This reflects the underlying nature of many public sector activities and the kinds of goals to which they are addressed. The impact on consensus-building, social justice and equity are obvious cases in point. Further, in many areas, public provision co-exists with that of the private sector, making it all the more difficult to attribute improvements solely to increased public involvement.

Education

Public spending on education has long been seen as contributing both to improved

economic growth through human capital enhancement and, by providing greater equality of opportunity, to a more equitable distribution of earnings and income. Historically, estimates of rates of return to education (conventionally measured by the difference in earnings between people who have gone on to further education and those who have not, compared to the cost of this education) indicate a positive contribution to economic growth.

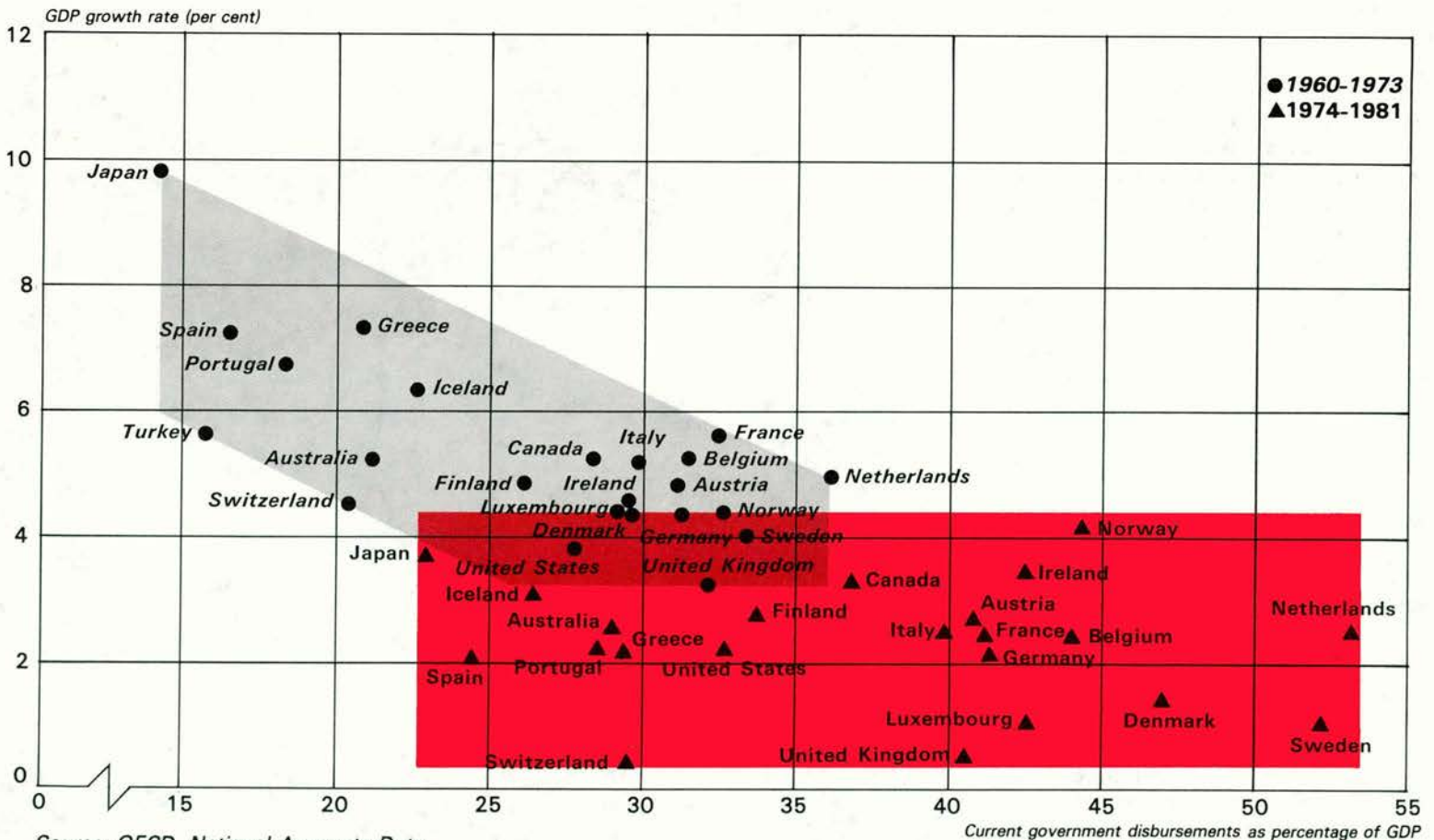
More recently, concerns have emerged over a mismatch between the skills obtained in higher education and those required in available jobs, this being reflected in declining returns to individual investment in education. The impact of public-education programmes on income distribution has proved less effective than was initially hoped, partly because skill level is but one factor determining an individual's life chances and income. However, one can view the education process not only as a means of affecting future earnings and income, but also as a "consumption item" contributing to the well-being of those educated. When total spending on education is analysed in this way, it appears that, while compulsory schooling benefits all socioeconomic groups equally, public spending on higher

education is concentrated on higher socioeconomic groups since it is they who dominate university enrolment.

Health

Both private and public expenditure on health services have grown rapidly over the last two decades. Public provision has been justified on two grounds: to improve the general health and well-being of the population and to reduce inequality in the access and use of medical treatment, particularly for the poor and disadvantaged. By its very nature, the health of a society is extremely difficult to measure with any precision. Aggregate statistics on life expectancy and infant mortality indicate substantial improvement in the last two decades, but it is difficult to attribute these to increased health expenditure (public or private) rather than to other changes in life styles. Research suggests that non-medical factors (diet, smoking, exercise and educational attainment) are more important than health-service provision in determining measured health status. At the same time, however, public provision of health services has greatly extended access to lower-income groups, government expenditures on health being concentrated on those with lowest incomes. →

ECONOMIC GROWTH AND PUBLIC SECTOR SIZE
annual averages



Source: OECD, National Accounts Data

Income maintenance

In the area of income maintenance, public expenditure on the two major areas, old-age pensions and unemployment insurance, has grown rapidly since 1960⁴. This reflects not only demographic changes which have increased the share of the population eligible for income support, but also policy adjustments which have extended programme coverage and raised real benefit levels. The net impact therefore, is that the safety net for the aged and unemployed is more widely spread and at a higher level than it was in 1960. One consequence of this is the substantial impact that income maintenance payments – particularly pensions – have made to the reduction of poverty and income inequality.

... and Drawbacks

The alleged adverse consequences of the developments outlined above include not only those resulting directly from increased public spending, but also the effects produced by the associated rise in tax and other public revenues.

Labour supply and demand

A prime concern of those critical of growth in public sector activity has been the effects on labour supply. It is argued that higher income support benefits paid to those who are not working and higher taxes imposed on those at work discourage work effort. One notable feature of overall labour supply trends is the decline, particularly in the Seventies, in the participation rate of older workers, reflecting the wider coverage and greater generosity of old-age pension schemes⁵. But the increased leisure time of the aged has been an intended goal of pensions policy, and it is thus misleading to refer to it as an adverse consequence.

The impact of more generous unemployment insurance schemes on the level of unemployment has been a further area of concern. It is argued that increases in unemployment benefits have raised what economists call "the replacement rate" – the ratio of income during unemployment to earnings while at work – and induced some members of the labour force to prefer unemployment to work and others to prolong periods of unemployment. Again, this latter impact is partly an intended goal of policy, since unemployment benefits permit the unemployed to search for an appropriate job rather than being forced, through financial pressures, to accept the first available opening. In this way, unemployment insurance can contribute to the smooth and flexible functioning of labour markets.

Evidence on the magnitude of unemploy-

ment induced by more generous unemployment benefits is mixed, although there is general agreement that some such effect exists. A number of studies indicate that substantial unemployment was induced in a number of countries in the late Sixties and early Seventies. Such studies have, however, been criticised on a number of grounds. More detailed analysis of unemployed individuals has produced lower estimates of the extent of such induced unemployment, and it is attributed more to the extension of unemployment duration than to increases in the number of the unemployed. It is also worth noting that unemployment benefits have declined, relative to the earnings of those at work, in many countries since the mid-Seventies, while overall unemployment has been increasingly dominated by the long-term unemployed. Evidence suggests that these people have not benefitted from higher

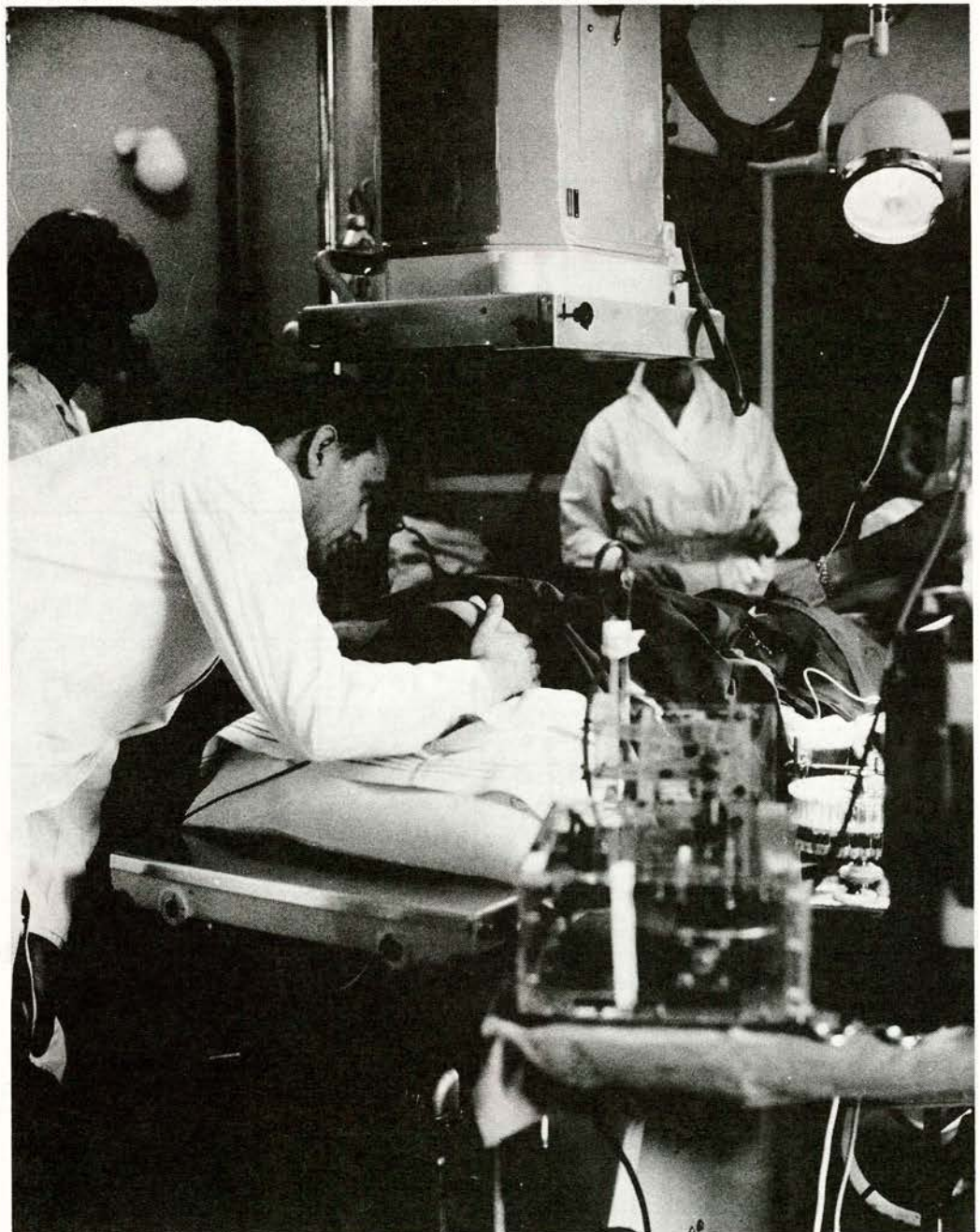
unemployment benefits to the extent that the shorter-term unemployed have. In any case, they appear less responsive to more generous unemployment benefits. These observations suggest that, whatever its magnitude in earlier periods, unemployment induced by more generous unemployment insurance schemes has not been a major factor in the dramatic rise of unemployment in the OECD area since 1979.

Labour supply is also thought to be adversely affected by income taxation which, along with social security contributions, explains much of the overall increase in the ratio of tax receipts to GDP

4. For more details, see "Social Expenditure: Erosion or Evolution?", *OECD Observer*, No.126, January 1984.

5. *Employment Outlook*, OECD, Paris, 1983.

The evidence indicates substantial improvement in health over the last two decades, but attributing this progress to increased health expenditure, public or private, is difficult.



since 1960. Although income taxation is often assumed to have adverse effects on work effort, this is not in fact necessarily the case: while income taxes reduce the rewards from additional work, they also lower disposable incomes and thus increase the need to work more to maintain living standards. Which of these effects dominate is an empirical question, one which has attracted much interest and a vast literature. Many of the studies undertaken refer either to the United States or the United Kingdom, and it is therefore difficult to generalise to other countries. Nevertheless, the bulk of the evidence suggests that prime-aged males are little affected by changes in income tax rates, while for females (particularly married women) income taxation does produce a disincentive to work. The precise impact depends upon the details of the tax system, including whether married couples are taxed individually or jointly, the tax treatment of child-care expenses and the availability of child-care facilities. It is striking, however, that female labour force participation rates have risen sharply in the last two decades in most OECD countries despite these tax disincentives.

The fact that it is difficult to reconcile popular views on the effects of high income tax rates on work effort with the available evidence may reflect the difficulty of capturing the intricacies of individual decision-making in a world where tax systems are complex. Some very recent studies for the United States which attempt to deal with these issues have found stronger disincentive effects than earlier studies suggest. It is also possible that the effects take longer to show up in labour market behaviour than is often thought, since individuals have little immediate choice over the amount of work they undertake. Both arguments suggest that the full impact of high rates of income taxation on work behaviour may only now be becoming apparent. To assess this possibility, emerging empirical evidence will need to be monitored closely.

The above effects of income taxation on labour supply may be reinforced by employees' contributions to social security funds. Although conceptually different from income taxation, in the sense that these contributions are linked to future social security benefit payments, their immediate impact on labour supply decisions is akin to the income tax, since the net returns from work are reduced. In contrast, employers' social security contributions put upward pressure on the overall price of labour by raising non-wage labour costs. This may reduce labour demand and employment, either through a substitution of other factors of production for the now more expensive labour, or through the detrimental effect of increasing costs on

profitability. Evidence tends to suggest that these effects do exist and that the structure and level of employment have been affected by employers' social security contributions.

Savings and investment

Adverse effects on savings are thought to accompany both the increased generosity of pension payments to the retired and high and rising rates of income taxation. Increases in pension payments may reduce household savings since households no longer have to make their own provision for retirement. National savings need not decline if governments save part of the social security contributions they impose in order to finance pensions. In many countries, however, this does not happen: governments use social security contributions to finance current pension payments; that is to say social security schemes are run on a "pay-as-you-go" basis. Thus, the possibility exists that national savings and hence capital formation and economic growth are adversely affected by the increased "social security wealth" which accompanies higher pension entitlements. Early studies for the United States suggested that this "savings replacement" impact of higher pensions was substantial and that potential economic growth was dramatically reduced. However, subsequent research has shown this result to be very sensitive to the precise assumptions required for its estimation. More recent studies fail to consolidate these findings for the United States, or for a number of other countries having similar pension arrangements.

Income taxation is also thought to affect savings behaviour since interest receipts are taxable in many countries so that taxation reduces the net return to saving. The precise impact depends both upon the details of the tax system and the motives for which individuals save. More importantly, it depends upon how responsive savers are to changes in the net return their savings generate. Estimates of this parameter (the interest elasticity of saving) have not to date proved sufficiently robust to substantiate the idea that savings are reduced by income tax. It is however possible that the composition of savings has been affected by how different forms of saving are treated for tax purposes. For example, in a number of countries savings in the form of life insurance policies or private pension funds are given favourable tax treatment which may have biased savings in these directions.

The effects of taxation on investment have proven extremely difficult to assess, partly because of the complex interactions among different taxes but also because there is no generally accepted model of the

investment process itself. Nevertheless, many countries have applied various tax measures (depreciation allowances, investment tax credits) in order to stimulate investment spending by affecting the net cost of capital. When one takes account of these measures, along with other tax influences affecting firms' behaviour (notably corporation tax and its interaction with personal-income tax), the resulting effective tax rates on investment show considerable variation across industries and between different types of assets. As in the case of saving, therefore, taxation may have its main impact on the composition of investment, particularly given the favourable tax treatment accorded to investment in residential construction and home ownership in most countries.

Income Redistribution

No analysis of government would be complete without reference to the effects of government tax and spending policies on the distribution of income. Historically, redistribution has always been a major goal of government activity, although it has not always been an explicit aim of individual programmes. Nevertheless, all public programmes (whether by design or not) affect income distribution, and it is of interest to assess their overall impact. This can be done by calculating the net fiscal incidence of government policies – the benefits received from cash transfers and other government expenditures minus total taxes paid (expressed as a percentage of original income).

Not surprisingly, such studies are fraught with conceptual and measurement difficulties, and the results which emerge can provide no more than a broad picture. Problems arise for example in deciding who exactly ends up paying the taxes imposed by government. To the extent that indirect taxes are passed forward into higher prices, it is consumers who ultimately pay them, even though the revenue is collected by the government from retailers or producers. Since there is no consensus on the degree to which such tax shifting takes place, it is necessary to make assumptions before tax or net fiscal incidence can be calculated.

Despite these difficulties, net fiscal incidence studies have been undertaken in a number of OECD countries. In addition, for a broad range of countries, studies are available on the redistributive impact of a narrower range of public sector activities⁶.

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6. *The results and methodology of these studies are presented in more detail in "Evidence on Income Redistribution by Governments", OECD Economics and Statistics Department, Working Paper, No.11, January 1984, by the author of the present article.*

Although there are substantial differences in the size and structure of the public sector across countries, the picture which emerges from these studies is surprisingly similar. The results show the major redistributive function which cash transfers play in all countries, since they are heavily concentrated on lower-income households. However, this in part reflects pension payments to the aged who dominate the lowest income ranges, rather than the explicit targeting of transfers on low income households. The benefits from other kinds of public expenditures tend to rise with household income but not proportionally, and thus are also somewhat redistributive. There are however, important differences between the redistributive impact of individual components of expenditure within and between countries, reflecting institutional differences and perceived social priorities.

Finally, in a number of countries the tax system as a whole has only minor effects on income distribution: the redistributive impact of personal taxes is offset by the regressivity of other taxes, notably indirect taxes and social security contributions. The net impact therefore, is that while public sector activity is redistributive overall, it operates primarily on the expenditure side, particularly through cash transfers, rather than through taxation.

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The above review reveals the difficulties of measuring the benefits and costs of activities undertaken in the public sector. Not only do some effects defy quantification – the building of social and political consensus for example – but evidence on individual consequences more amenable to measurement is in many cases mixed and not yet sufficiently robust to permit firm conclusions for policy. To conclude that the evidence is mixed does not, of course, imply that there are on balance no adverse effects; individual consequences may be small and hence difficult to measure, yet their sum could nevertheless be significant. Furthermore, there are instances where concern appears justified and where remedial action is warranted. These need to be dealt with on a case-by-case and country-by-country basis. There are no general conclusions or solutions, just as there are no generalisations one can make about alleged effects. This is, of course, appropriate since the development of the level and pattern of public sector activity reflects the institutional and historical development of individual countries and the wishes of electorates. As in the past, these will be paramount in determining the future course of the public sector in our economies.

Computer Crime

by Martine Briat¹

Recent news stories have featured a student in the United States charged with using an international data communications network to break into some 200 computer accounts at 14 sites around the world²; another student who penetrated the central memory of a company computer and erased data from it; a bank employee who opened a fictitious account in a subsidiary abroad and credited it with a small sum of money each week by manipulating a computer programme.

These are examples of what has come to be called computer "crime", though the term is sometimes an exaggeration since the act may be carried out with criminal intent but may equally be a mere show of technological prowess or even be caused by negligence or operator error. Because intent is so hard to prove, and because of the novelty of the "crime", national legal systems are ill equipped to cope with this type of crime which, as computer systems are increasingly interlinked through telecommunications networks, has taken on an international dimension.

The legal issues that arise in this new field and the way in which OECD countries are tackling them are explored in the following article.

Estimates of the extent of computer crime, which would be useful in formulating national legislation, are only tentative at best because victims do not usually report it, fearing for their business credibility (some 75-80 per cent of the incidents may be unreported). Hence the estimates of \$100 million a year as the cost of computer crime in the United States, and \$30 million a year in Japan³ are highly approximate.

Another obstacle to assessing the size of the problem is that the very concept of computer crime is hard to define. Surveys carried out to date have lumped all forms of computer tampering together, whatever the motive behind it. It is hard enough to establish what happened in a computer crime, but a good deal more difficult to gather the legal evidence and harder still to prove whether the person committing the "crime" was acting in good faith or with criminal intent. Yet such a determination is necessary when meting out punishment.

Data is essentially transient by nature and has a complex legal status. Few countries are prepared to apply the doctrine of property rights to data: the very

notion of theft is inappropriate, since it is impossible to steal something if it does not belong to anyone in the first place. Theft has traditionally been used to describe the fraudulent removal of a thing from its owner – either a physical object or an intangible commodity whose economic value can be established, such as electricity or parking time. When data is "stolen", it is merely copied, while the original remains in the computer in its original form. Has it, therefore, been fraudulently removed or not? Have the owner's property rights been infringed, since he still has the use of his data, or has he, in fact, suffered no loss at all? Some forms of "organised data", such as computer programmes, can be stolen, if they are protected by copyright laws. But in a country where copyright is not recognised, it is difficult for the owner to protect his property.

1. OECD Directorate for Science, Technology and Industry, Division of Information, Computer and Communications Policy.

2. *Computer World* No. 45, November 7, 1983.

3. *Computer World* No. 52, December 26, 1983.

Another example of computer crime is falsification. Changing a programme or keying in erroneous information might in certain cases constitute falsification, but in most criminal codes four conditions must be met: the falsified document must be in written form, it must express a thought, it must have legal significance and it must enjoy public confidence (i.e. the community must acknowledge the truth or authenticity of the legal act or fact contained in the document). It is quite evident that data entered into a computer memory does not meet the first condition, but ambiguities surround the other three.

Although security measures such as personal identification numbers, restrictions on the number of people having access to the system, protective software and verification procedures for data entry may help to prevent some forms of computer crime, they are not enough on their own.

A critical factor is the definition of computer crime, because that determines what is and is not an indictable offence. But the definitions used by different OECD countries (now being investigated by various commissions) vary considerably, and this could create problems if the offences have international ramifications. To avoid such complications, it would be useful for OECD countries to obtain information about work being done elsewhere so that laws being drawn up are not incompatible. For if they were, accords providing for cooperation in indictment and punishment would not be enforceable. Another reason for an international approach: it is often impossible to establish where, geographically, an offence was committed and hence to decide which country's legislation should apply.

Applicability of Present Laws

Individual countries' juridical response to computer crime depends on the scope and provisions of existing legislation. Some criminal codes may constitute a satisfactory basis for prosecuting computer crime, as demonstrated by judgments handed down in the courts of Germany, Canada, the United States, Italy and Sweden. In many cases, however, criminal codes need to be amended to take account of the intangible nature of data and the new dimension brought to traditional offences by information technology.

Some countries, such as the United States, recognise the individual's right to private ownership of computer programmes, and that makes legal action easier to take in the event of theft. Similarly, in those countries which are coming to acknowledge that data banks should be

CLASSIFYING COMPUTER CRIME¹

Interference with data processing
interference with data or input to system

interference with programmes
interference with terminal commands
interference with data at time of output
improper use of local or remote computer services

Computer espionage
theft of software
theft or wrongful use of data

Computer sabotage
erasure or alteration of data
vandalism

Theft of computer time

Ordinary economic crimes i.e. misappropriation of funds through the use of computer facilities.

1. Classification, drawn up by Dr. Ulrich Sieber in *Betriebsberater* of August 30, 1982, *Gefahr und Abwehr der Computerkriminalität*, is an example of the kind of work being done on the question of definition in OECD countries.

accorded copyright protection, the erasure, alteration or theft of data would be covered by existing legislation.

Those countries which have introduced laws to protect privacy and/or data already possess a legal framework for prosecuting specific instances of so-called computer crime. But such legislation refers only to "personal" data and can only be invoked in cases where data relating to individuals has been interfered with, wrongfully disclosed or compiled, and where the individuals concerned have suffered personal damage in consequence.

Even in countries where existing legislation applies only to personal data, case law is beginning to develop, however. For example, the French Court of Appeals ruled in 1976 in a case involving "introduction of a magnetic card into an automatic cash distributor when no funds were in the account" that it was possible for someone

A programming genius called Hank
Wrote a system to 'access' his 'bank'
When his memory failed him
They nailed him then jailed him
Now his 'storage' is 'basic' and dank.

W.E. Sword, Barningham, Suffolk

(Courtesy of The Listener, London)

to "deceive the machine". The Court argued that producing documents designed to convey the impression that an account was in credit when in fact it was not, constituted a "manoeuvre" — in other words, an offence — since the documents were for use in a computerised procedure conferring on them authority and credibility. Canada and Germany have introduced draft legislation to deal with this kind of offence, and similar steps are being taken in Australia, Norway and Switzerland. In the United States, 21 states have passed legislation designed to combat this type of offence since 1978.

American laws tend to ascribe ownership rights to holders of data. The same is true of Australia, where a report by the Computer Crime Commission suggests that four new types of offence should be identified⁴. Draft legislation in Canada, although defining only two new offences — the unauthorised use of computers and offences associated with the destruction, alteration or interference with the use of data — amends the Criminal Code to bring penalties for ordinary offences into line with the more serious nature they may acquire if committed with the application of computer techniques⁵. It does not, however, resolve the problem of data theft.

Germany's second draft bill on economic crime introduces several new indictable offences, such as damage to property as a result of interference with computer programmes, interference with stored data and theft committed with the help of data-processing technology. In respect of the first of these three categories, the law governing theft and falsification will be amended to take account of the possibility that the offence was committed by computer. While the proposed legislation does not deal with the problem of data ownership as such, it does introduce a data processing dimension into the field of "ordinary offences" and brings penalties into line with the potential loss that can arise from using computers as an instrument of crime.

This summary of developments on the legislative front in a number of OECD countries, while by no means exhaustive, does illustrate the difficulties that legislators face in defining terms for indictable offences in the realm of computer crime. The speed of technological progress has created a totally new legal situation and calls for common definitions of the new phenomena that constitute computer crime. →

4. Broadly comparable with the classification illustrated in the inset.

5. Report of the Sub-Committee on Computer Crime, Standing Committee on Justice and Legal Affairs, June, 1983.



Computer crime may become more frequent as increasing numbers of people learn to use computers.

The Role of Management

When an offence is committed on company premises, disciplinary action may be taken. At that level too, however, the status of computer property, including what is and is not an offence, is in legal limbo. A clear borderline has yet to be drawn between lawful and unlawful actions. In France, for instance, it is not clear that a salaried programmer who has assigned the copyright for all his products to his employer, is not *morally* entitled⁶ to object to changes in the software he has developed. Employers tolerate certain employee practices, but these activities may constitute an offence in the eyes of the law. If, for instance, an employee makes use of a computer system for his private ends, does that represent a theft of company computer time? Internal rules and guidelines within companies would help to clarify what is and is not acceptable.

The computer profession should encourage its members to be conscious of the risks and legal obligations associated with computer systems. Since it is hard at a practical level to distinguish between negligence and criminal intent, security procedures are needed which can pinpoint the source of changes made to data. More scrupulous respect of security procedures, the use of personalised confidential codes, restrictions on the number of people with access to the system for a limited time and the appointment of a data-processing manager to be solely responsible for all such matters, would all help to limit the scope

for incidents that might subsequently be regarded as criminal offences.

...and Insurers

In response to the growing demand for protection against computer crime, some insurance companies have started in recent years to offer special policies. But with the figures for computer crime so approximate and unreliable, premiums are difficult to calculate. Policies generally cover the first risk only, which means they are automatically terminated by the first claim and then have to be renegotiated. Moreover, the security conditions imposed by the insurers are very strict.

Although nearly all computer policies are tailor-made, they may provide cover for several specific types of loss, such as the damage resulting from the *fraudulent entry of electronic data* into the policyholder's own computer system, or the computer system of a bureau processing data on his behalf, or into a system for the electronic transfer of funds, or into the telecommunications network of a customer linked directly to the policyholder's own system. Other risks covered might include: the *fraudulent alteration or erasure of data* entered into these systems, whether directly or via data transmission networks, as well as acts of fraud committed anywhere in the world by someone with access to the system, seeking either to inflict damage on the policyholder or to gain some financial advantage; the *fraudulent development or alteration of computer pro-*

grammes, the wrongful erasure of electronic data and the theft or loss of data processing media at the processing site or during transmission. Some policies may also cover indirect losses arising from a consequent fall in customers or profits.

Since insurance companies insist on assessing the installations of a company or individual before agreeing to issue the insurance policy, computer-security audits are beginning to acquire considerable importance. A code of conduct to regulate this new profession would be desirable in view of the large amount of valuable and sensitive information that may come into their possession when they inspect companies' computer facilities.

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Work on assessing and combating computer crime is at an early stage, and new and difficult problems arise daily which are outside the scope of existing legislation. However, that also implies that there is a great opportunity for tackling the issues at an international level where the repercussions may be felt. A common approach to the problem, together with a full exchange of information, could result in individual countries opting for common solutions that could be applied internationally. This would not only bring about a greater harmonisation of national laws but also facilitate the prosecution of international crime, as well as promote and encourage transborder data flows.

6. Defined by Article 6 bis of the Berne Convention for the Protection of Literary and Artistic Works.

Transfrontier Movements of Hazardous Waste: Getting to Grips with the Problem

Last Spring the whereabouts of the drums containing soil contaminated by dioxin from Seveso had governments, the public and the press throughout Europe on tenterhooks for weeks. This search was but the latest – though admittedly one of the most dramatic – in a series of incidents resulting from the lack of laws and regulations covering the transfrontier movement and subsequent management of hazardous waste. A Decision recently adopted by OECD's Council is aimed at remedying this situation.¹ The Decision is accompanied by a Recommendation concerning its implementation. This is the first multilateral, legally binding agreement controlling the export and import of hazardous waste.

National Monitoring

In recent years, many governments have developed measures intended to enable them to monitor the management of hazardous waste while it is en route from the place of generation to the place of disposal within their own frontiers. These systems usually involve the authorisation of treatment and disposal facilities, the licensing of transporters, and provisions for reporting necessary information to the competent authorities. Establishment of such systems requires knowledge of:

- which industries generate hazardous waste
- which firms handle, treat or dispose of it
- what the characteristics of the waste (toxicity, corrosiveness etc.) are and the amounts generated.

There are a number of reasons why countries have felt the need to take action in this area:

First, the amount of hazardous waste generated is large. According to estimates, about 150 million tonnes are generated annually in the United States and 20-24 million tonnes in OECD-Europe. A large part of the waste from manufacture and use of chemicals is itself chemical in nature,

though there are also quantities of "every-day" products like waste motor-oil and used batteries. Since a "waste" by definition has no intrinsic economic value to its generator, the latter does not usually have any incentive to spend large sums on treatment and disposal. Such wastes have thus generally been disposed of by methods which were relatively low in cost to the generator. Often simple land-based storage or dumping was chosen.

Another decisive factor was that, as experience has shown, prevention in this area is very much better than cure. The cost to society of remedying situations brought about by improper disposal can be very high:

- In Lekkerkerk (Netherlands), around 1970, chemical waste with high solvent content was illegally added to demolition waste used to fill ditches in a swampy area for reclamation purposes. Severe problems of air pollution inside houses and contamination of local drinking water resulted a few years later. Clean-up costs, over ten years, including the evacuation of residents and the removal and incineration of contaminated soil, amounted to about 200 million guilder (\$63.7 million). If the original chemical waste had been incinerated, the cost would have been one thousandth of that sum.

- More recently, the United States Justice Department filed a suit for \$1.85 billion on behalf of the Department of Defence against a private company. This is the amount the Department of Defence estimates would be required to clean up the contaminated area of the Rocky Mountain Arsenal (in Colorado) where wastes con-

1. A Decision of OECD's Council is legally binding on Member governments who must put it into effect in accordance with appropriate national procedures.

DEFINITIONS

Waste means any material considered as waste or legally defined as waste in the country where it is situated or through or to which it is conveyed;

Hazardous waste means any waste other than radioactive waste considered as hazardous or legally defined as hazardous in the country where it is situated or through or to which it is conveyed, because of the potential risk to man or the environment likely to result from an accident or from improper transport or disposal;

Transfrontier movement of hazardous waste means any shipment of waste from one country to another, where the waste is considered as being hazardous waste in at least one of the countries concerned. Hazardous waste arising from the normal operation of ships, including slops and residues, shall not be considered a transfrontier movement covered by this Decision and Recommendation;

Exporting country means any country from which a transfrontier movement of hazardous waste is initiated or is envisaged;

Importing country means any country to which a transfrontier movement of hazardous waste takes place or is envisaged for purpose of disposal (treatment, landfill, storage, dumping or incineration at sea);

Transit country means any country other than the exporting or importing country across which a transfrontier movement of hazardous waste takes place or is envisaged;

Countries concerned mean the exporting, transit and importing countries;

Entity means the waste generator and any natural or legal, public or private person, acting on his own behalf or as contractor or sub-contractor (export, import, transport, collection, disposal, etc.), who owns or has the possession of the waste.

taining pesticides and other chemical products were deposited. Underground water and thousands of tons of soil are contaminated with chemicals that threaten aquifers which serve the area adjacent to Denver's international airport.

Export and Import: National Systems Do Not Suffice

Some of the hazardous wastes generated are treated or disposed of in a country other than the country of origin, though it is difficult to ascertain exactly how much. The proportion of hazardous waste generated on national territory that is exported is about 8-10 per cent on average in Europe, but the figure varies from country to country and can be as high as 30 to 40 per cent. In any case the quantities crossing frontiers are substantial.

Why do countries export waste? Many OECD countries are finding it increasingly difficult to site hazardous-waste-disposal facilities on their own territory because of public opposition – the “not-in-my-backyard” syndrome. In this situation, the economics often favour disposal in another country as a lower-cost alternative even when the costs of transport are added.

Among other – quite legitimate – reasons for exporting hazardous waste:

- Newer (and more cost-effective) technologies may be available in another country.
- Appropriate facilities of a neighbouring country may be closer to hand than an equivalent plant on national territory (lower transport costs).



Barrels containing dioxin wastes from accident in Seveso, Italy, being carted away from the French town in which they were found in May 1983 after having been “lost” for eight months.

- A large facility serving an entire region can operate more economically than a number of smaller plants in different countries (economies of scale).

To these reasons for exporting waste must however be added a further motivation: that of disposing of the waste in another country where less stringent regulations apply.

Until now there has been no properly organised monitoring of the international transport of hazardous waste²; countries generally have not had sufficient knowledge of consignments of waste entering or

leaving their territory to exercise proper control.

The OECD Decision and Recommendation is intended to fill this gap. It does not seek either to curb or to promote the transfrontier movement of waste. Rather it is designed to provide a framework within which the competent authorities of all the countries concerned have adequate and timely information on these movements. The authorities can then ensure that differ-

2. *Specific and very strict regulations have applied from the outset to the transport, export, storage and disposal of radioactive waste.*

DECISION AND RECOMMENDATION OF THE OECD COUNCIL ON TRANSFRONTIER MOVEMENTS OF HAZARDOUS WASTE*

The Council, considering

- that a number of OECD Member countries generate substantial amounts of hazardous waste and that a significant proportion of such waste is subject to transfrontier movements;
- that efficient and environmentally sound management of hazardous waste may justify some transfrontier movements of such waste in order to make use of appropriate disposal facilities in other countries;
- that the generator of a hazardous waste has responsibilities to ensure that the disposal of its waste is carried out in a manner consistent with the protection of the environment, whatever the place of disposal;
- that countries have the sovereign right to manage hazardous waste within their jurisdiction pursuant to their own environmental policies and legislation, taking account of the rules of international law;
- the need for concerted action among Member countries to protect man and his environment against pollution which may arise in connection with hazardous waste management;

On the proposal of the Environment Committee:

- decides that Member countries shall control the transfrontier movements of hazardous waste and, for this purpose, shall ensure that the competent authorities of the countries concerned are provided with adequate and timely information concerning such movements.
- recommends that, to implement this Decision, countries apply the principles concerning transfrontier movements of hazardous waste set out below.
- instructs the Environment Committee, having regard to work of other international organisations, to elaborate a programme of activities to develop further the principles set out below and facilitate their implementation, and to explore what additional international action may be necessary concerning transfrontier movements of hazardous waste.
- instructs the Environment Committee to review periodically action taken by Member countries in pursuance of this Decision and Recommendation.

* The Australian Government has abstained pending finalisation of consultations with the state governments.

PRINCIPLES CONCERNING TRANSFRONTIER MOVEMENTS OF HAZARDOUS WASTE

The following principles are designed to facilitate the development of harmonized policies concerning transfrontier movements of hazardous waste. They do not prejudice the implementation of more favourable measures for the protection of the environment that are now in force or that may be adopted; neither do they prejudice the application of any international agreement dealing with the free trade of goods or services or the transport of dangerous goods.

General principles

Countries should ensure that hazardous waste situated within the limits of their jurisdiction is managed in such a way as to protect man and the environment. For this purpose, countries should promote the establishment of appropriate disposal installations and should adopt all necessary measures to enable their authorities to control the activities related to generation, transport and disposal of hazardous waste, and to ensure compliance with the laws and regulations in force.

In respect of the management of hazardous waste that is subject to transfrontier movements countries should require that:

- the entities concerned abstain from participation in transfrontier movements which do not comply with the laws and regulations applicable in the countries concerned;
- the entities involved in transport or disposal be authorized for this purpose.

Furthermore, with regard to any specific transfrontier movement of hazardous waste, countries should require that the generator of the waste should:

- take all practicable steps to ensure that the transport and disposal of its waste be undertaken in accordance with the laws and regulations applicable in the countries concerned;
- in particular obtain assurances that all entities concerned with the transfrontier movement or the disposal of its waste have the necessary authorisations to perform their activities in accordance with the laws and regulations applicable in the countries concerned;
- reassume responsibility for the proper management of its waste, including if necessary the re-importation of such waste, if arrangements for safe disposal cannot be completed.

Countries should apply their laws and regulations on control of hazardous waste movements as stringently in the case of waste intended for export as in the case of waste managed domestically.

International Pre-Notification and Cooperation

Countries should co-operate in the control, from the place of generation to the place of disposal, of all hazardous waste that is subject to transfrontier movements.

- For this purpose, and given the Decision, countries should take the measures necessary to ensure that the entities within their jurisdiction provide, directly or indirectly, the authorities of the exporting, importing and transit countries with adequate and timely information.

- This information should specify the origin, nature, composition, and quantities of waste intended to be exported, the conditions of carriage, the nature of environmental risks involved, the type of disposal and the identity of all entities concerned with the transfrontier movement or the disposal of the waste.

Exporting countries should take the measures necessary to ensure that a request from an importing or transit country for relevant information elicits a constructive and diligent response.

Countries should adopt the measures necessary to enable their authorities to object to or, if necessary, prohibit the entrance of a consignment of hazardous waste into their territory, for either disposal or transit, if the information provided is insufficient or inaccurate or the arrangements made for transport or disposal are not in conformity with their legislation.

Countries should take all practicable steps to ensure that a projected transfrontier movement of hazardous waste is not initiated if one of the countries concerned has decided in conformity with its legislation to oppose the import or transit of the waste and has so informed the entities or authorities concerned in the exporting country.

When an importing or transit country opposes in conformity with its legislation a transfrontier movement into its territory and the waste has already left the exporting country, the latter should not oppose reimport of the waste.

ences in national policies or control requirements do not result in inappropriate export or improper disposal of hazardous waste. The object is to place all transfrontier movements of hazardous waste into an organised system meant to ensure proper handling and disposal.

The implementation of the Principles built into the Recommendation which accompanies the Decision will require the existence of effective national laws, regulations or administrative practices and the strengthening of international co-operation³. An effort has been made to keep to a minimum the additional administrative burden on governments and private companies.

The basic framework of the Principles involves prior notification – direct or indirect – of the competent authorities in the countries concerned by a transfrontier movement of hazardous waste (i.e. the exporting, importing and, where relevant, transit countries). The Principles underline the responsibility of the waste generator regarding the proper disposal of his waste and include provision for delaying, or if necessary prohibiting, a proposed transfrontier shipment if it is found that the arrangements for its transport and disposal do not comply with the laws and regulations applying in the countries concerned.

The Decision and Recommendation do not attempt to prescribe the individual measures which would be necessary for effective implementation. These might include such matters as:

- the proper and standardised labelling of hazardous waste consignments subject to transfrontier movements
- restriction of the number of entry points to a country for such consignments
- the specific content of prior notification of the competent authorities
- the notification procedures (OECD will look into these in detail during the next stage of international discussions aimed at implementing this Decision and Recommendation).

Clearly, if the Decision and Recommendations had existed at the time of the Seveso affair, this incident might have followed a different course: governments and the public might have been spared both worry and time. For the future, appropriate implementation of the Principles should give confidence to all parties that transfrontier movements leading to improper disposal of hazardous wastes are less likely to occur.

3. The Decision is fully compatible with work in progress in the European Communities. Discussions on its implementation will, of course, take into account the need to avoid duplication of administrative work by governments and companies.

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