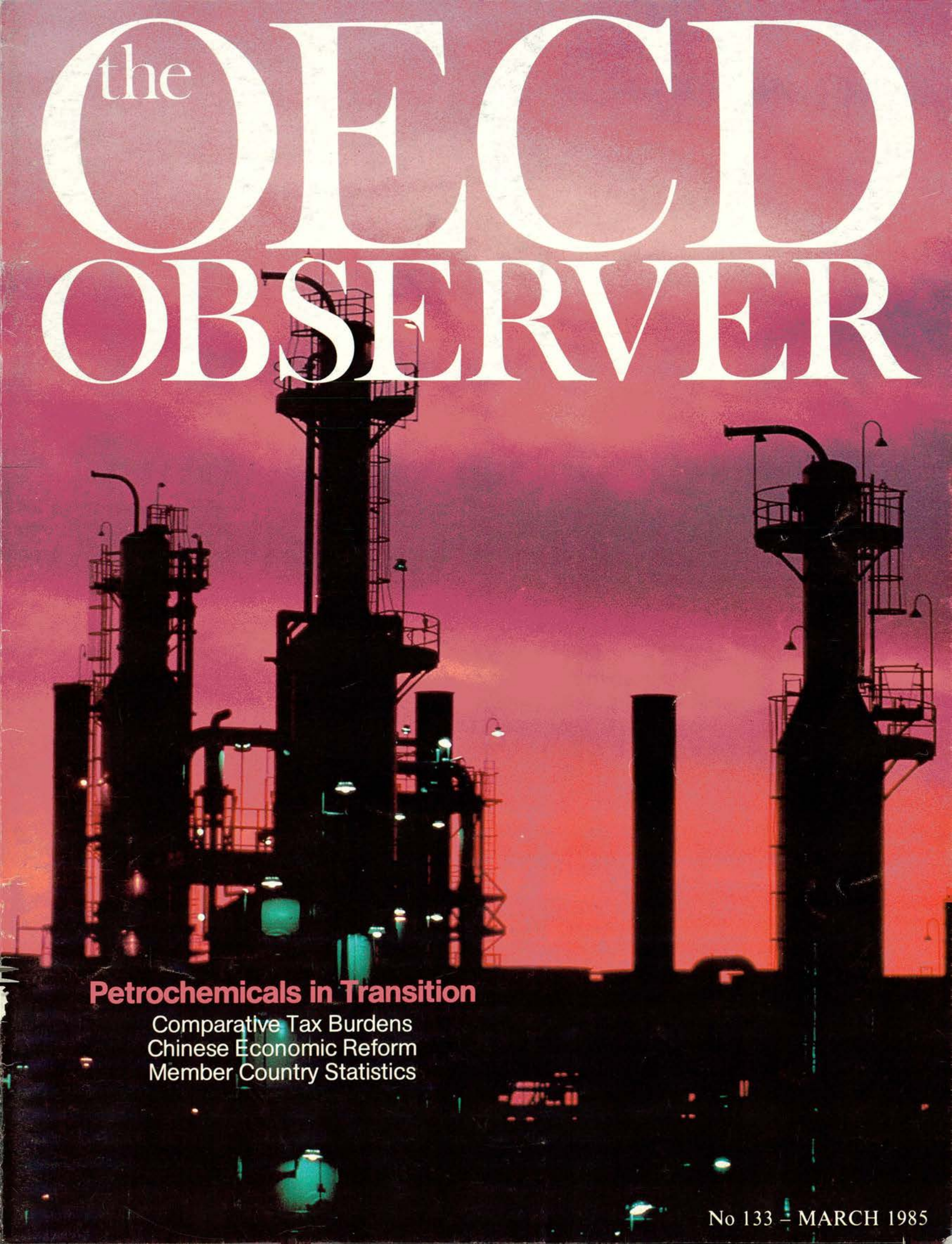
the OECD OBSERVER



Petrochemicals in Transition

Comparative Tax Burdens
Chinese Economic Reform
Member Country Statistics

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Agenda for the Second Half of the Eighties

by Jean-Claude Paye,
Secretary General of OECD[1]

The Assessment

Compared with 1981 and 1982, the situation as regards output, trade, and prices has improved appreciably in the OECD area. The increase in production of goods and services has produced average Gross National Product growth of about 4¾ per cent in real terms. This represents substantial progress compared to GNP growth of only 2.6 per cent in 1983, –0.5 per cent in 1982 and 2 per cent in 1981. After falling by 4 per cent in 1982, international trade, largely driven by trade among OECD countries, grew by 9 per cent last year, so contributing to the spread of growth. Most important of all, inflation has continued to fall. From 12.9 per cent in 1980, it was down to only 5 per cent in 1984, which is the lowest figure in the last 12 years. This result is of particular importance. It proves that the fundamental restoration of the OECD economies is well underway, since the recovery has not been accompanied by renewed inflationary pressures. This improvement, together with continuing keen international competition and the existence of spare productive capacity – though this concept must be treated with care in a period of far-reaching technological change – will enable our economies better to realise their potential for non-inflationary growth. Barring unforeseen changes in economic policies, major shocks, or wide fluctuations in the exchange rates of the main currencies, the OECD Secretariat considers that growth should be about 3 per cent in 1985, with inflation held to 4¾ per cent. But it should be possible to do better.

This assessment is all the more important in that this economic picture is not wholly satisfactory. There are in fact some worrying dark clouds, first and foremost the unemployment situation, particularly in a number of European countries.

In the long run, persisting high levels of unemployment could only be interpreted as an unmistakable sign of the failure, in social and human terms, of the policies of OECD countries. The ultimate objective of economic activity is improved general welfare. Economic growth which, in the end, benefited only part of the population and left the rest behind, would betray this objective and would eventually give rise to intolerable tensions within, and among, our countries. This would be socially, politically and morally indefensible. If, at the end of the road we were to find that, despite a protracted period of economic growth, the number of jobless was not declining substantially, that the duration of unemployment was increasing, and that the proportion of young people vainly seeking employment was rising, we would be entitled – indeed obliged – to question fundamentally the vigour and coherence of the measures that governments and the social partners must undertake together.

Hence the importance of analysing comparative national performance on employment. The picture is complex and full of contrasts. Certainly it is important to take account of each country's individual characteristics: its demography, traditions, and social and political situation. But on the whole it is apparent that the job-creating capacity of the various parts of the OECD area is not proportional to the growth rates they have achieved over the past two years. There is a striking contrast between, on the one hand, the United States where the unemployment rate has fallen in two years from 9.7 to 7¼ per cent and Japan where unemployment remains moderate and, on the other hand, Europe where – despite the relatively satisfactory situation in some Scandinavian countries, and still more in Switzerland – an average rate of economic growth of 2¼ per cent in 1984 has not brought any decline in unemployment. Growth rate differentials between the United States and Europe do not fully explain, far from it, the different unemployment rates.

The employment situation is not the only black cloud in the economic picture. There are many areas of uncertainty, fragility and imbalance, and they prompt a host of questions.

What is going to happen to economic activity in the United States? After an outstanding first half, growth slowed sharply in the second half of 1984, but seems now in early 1985 to be picking up again. This forecast is difficult and yet essential given the weight of the American economy. At present there are a number of signs which arouse concern. The budget deficit has reached levels which, as the American authorities themselves recognise, cannot be sustained over time. Though interest rates have come down in nominal terms, in real terms they remain very high and this may well eventually affect economic activity in a country where borrowing is traditionally heavy. The dollar exchange rate is considered almost unanimously to be clearly overvalued, which in turn dangerously increases protectionist pressures and gives rise to fears that the dollar could at any moment begin an excessive and hard-to-control decline.

However, the worrying aspects of the economic and financial situation in that major country are not the only source of uncertainty. How is the Japanese economy going to perform? For the past two years it has benefited remarkably from global recovery, thanks to its ability to adapt rapidly and effectively to market developments and to maintain its competitive position. If demand were to weaken markedly in its major market, the United States, would Japan be able to make good that demand

1. Based on a speech to the Parliamentary Assembly of the Council of Europe, Strasbourg, 31st January 1985.

elsewhere – particularly at home? Can Japan, always a very effective competitor on international markets, become, for itself as well as for its trading partners, a major force in shaping economic conditions?

And Europe? After a painful period of putting government budgets back in order, after vigorous and broadly successful efforts to reduce inflation and after a courageous beginning on the much-needed modernisation of its productive structures, will Europe have the necessary resources, energy, and determination to start off again on the right footing?

The series of disturbing questions does not end here. What is going to happen in the Third World, with its very diverse situations? It too is labouring under the rigours of essential adjustments – now beginning to show results: the burden imposed by costly borrowing and commodity prices, which are surprisingly low during a period of economic recovery. What does the future hold for an international monetary system beset by exchange rate fluctuations so large that economic agents are prompted to be excessively cautious? What is the future of the international trading system? It is multilateral and open, and that is what we want, but practices both overt and covert risk rendering it bilateral, opaque and restricted.

These are some of the main questions that have to be asked. They temper the optimism of any assessment of the present economic situation. They make forecasting more hazardous. But above all they provide food for thought: efforts must be made to understand more fully the characteristics of the economic world of today.

The Explanations

Far-reaching changes have occurred over the last fifteen years or so that need to be understood if the risks they entail are to be avoided or at least reduced and the opportunities that they present grasped. Five of these changes can be cited, though the list is by no means exhaustive.

First: the growing interdependence of countries' economies, both within the OECD area and between the OECD and the rest of the world. This is now an accepted notion, a commonplace, even though governments have not yet drawn all the conclusions needed for the conduct of their policy. This interdependence, principally described in macroeconomic terms as the expansion of international trade, is also, and indeed more fundamentally, microeconomic. Its essence derives from the manifold ties that unite firms, and individuals too, through the exchange of goods, services and capital, and the transfer of technology. It is grounded in the extraordinary development of communications, in particular telecommunications. Its consequences are multiform and far-reaching. Just one example is how volatile capital movements have become through the development of prodigiously complex banking networks and instantaneous transmission systems.

Second: the growing place held by the developing countries in the world economy – and this is both a cause and an effect of the interdependence between what are conventionally called the North and the South. This notion is again an accepted one, but its implications must be properly grasped. Increasing numbers of countries, especially in South-East Asia and Latin America, have entered the industrial era at high speed. The difficulties that some are currently encountering must not disguise the underlying reality, whose importance is not only economic but also political. Endowed with substantial material and human resources, these countries have immense growth potential. They rightly aspire to be considered by our countries as full fledged partners, and seem intent on putting effective economic policies in place. We need to respond to these aspirations by taking greater account in our behaviour and our policies of the legitimate concerns of the newly industrialising countries. We need, together with them, to seek out paths for mutually beneficial co-operation.

Third: the development of international co-operation has not kept pace with this increased interdependence. International co-operation is not to be assessed solely by the number of multilateral meetings or the level of activity in international organisations. It is to be gauged just as much, if not more, by the attention that countries – especially the major ones – pay to the effects of their policies on their partners, to fulfilling their commitments, to maintaining clear and equitable international rules of the game, and to the quality and balance of their economic and financial management. Just as the harmonious functioning of any human society depends on the responsible behaviour of its members, so the harmonious functioning of international society depends on responsible behaviour by governments. There is, beyond any doubt, room for progress here.

Fourth: the pace of technological change. It is no doubt difficult to be certain which of two analyses is correct. Some consider that the world has embarked upon a genuine techno-

"Sub-Saharan Africa has absolute priority need of immediate, generous and extremely varied aid."

logical transformation that will substantially reduce the need for work, and call into question not just the structure of industry, but social and cultural structures as well. Others, on the contrary, argue that technical progress is a continuing process and that our societies have in the past proved capable of absorbing major technological innovations without undue strain and, in fact, of exploiting them advantageously for economic growth and the general well-being. The future will tell which analysis is right. In any event, it is clear that the pace of technical change and the high incidence of innovation require continual adjustment both of individuals and of structures.

Fifth: a significant and promising development, that is growing ever clearer, is the development in attitudes leading the individual, increasingly aware of the requirements of a rapidly changing world, to assume more responsibility for his own destiny. The crisis of the last ten years and more has called into question the myth of infinite growth and a risk-free economic world. The need for effort, the value of individual initiative, the belief that a capacity to adjust is vital, the recognition of the handicaps that may stem from governments assuming excessive economic responsibility, or even from social safeguards carried to extremes – all these are contributing to a far-reaching change in attitudes.

These features then portray a world characterised by a high degree of uncertainty. If we are not careful, that uncertainty may lead to serious difficulties. It risks discouraging entrepreneurship. It may serve as a pretext for inward-looking policies, for protectionism. Within our societies it may provoke increasing polarisation between those who adjust and prosper and those who are left behind. Finally, it may widen, rather than narrow, the gap between the developed and the developing world.

These considerations should govern the action that is needed to which OECD can, I believe, make an effective contribution.

The Lines for Action

What is in fact the OECD's mission? It is to provide the governments of its Member countries with a forum for discussion in which they may jointly analyse the economic and social problems confronting them, gain from their shared experiences and seek together the directions in which to steer their individual or collective action. The variety, but also the complementarity, of the OECD's activities represents a considerable asset. Economic and social policy must inevitably encompass many facets of reality.

In the present situation, it seems to me that the aim of the OECD – and, through it, of the governments working together – must be to seek out and implement the ways, all the ways, by which to reduce uncertainty and to build up confidence. When confidence is lacking, economic activity falters or weakens.

Action is needed in a broad range of areas.

1. *On the macroeconomic front,* first of all. For many years the OECD's reputation and effectiveness rested in large part on its Member countries' capacity to focus on the conduct of their short-term economic policies. More recently the emphasis in individual countries has become more microeconomic and domestically-oriented, shifting towards putting their economies back in order and improving their capacity to adapt. This change in stance may perhaps have given the impression in some quarters that one of OECD's most important functions was receiving less emphasis and that the spirit of international co-operation was giving way to a mounting preoccupation with purely national concerns. In reality, international co-operation requires responsible behaviour and good management by every partner. It is in the framework of macroeconomic analysis and discussion that this responsible behaviour and good management must be assessed. Economic policies have to be viewed as a whole. With this in view, it is planned to enhance cyclical analyses by the addition of data relating, in particular, to the international financial situation and the progress of structural adjustment. It is on this basis that, in its discussions and in the competent committees and working parties, the OECD must aim to produce a common analysis from which can be derived guidelines for the policies of each country.

2. Another area requiring action is that of the *structural improvements* that must be made to our economies to enhance their performance and so increase the chances of durable and non-inflationary growth. Here there is considerable scope for research and fresh initiatives. A few examples will suffice: the volume of public expenditure as a proportion of national product and how to optimise its economic impact; examination of tax systems with a view to finding the best means for enhancing productive activity; the study of investment determinants and of the influence of the growth of labour costs relative to the cost of capital; in-depth analysis of the different aspects of unemployment and identification of ways of promoting job creation; analysis of the problems posed by social security systems; research into ways of ensuring that human resources are put to their best possible use and that labour market flexibility is such as to contribute to increased employment; protection and improvement of the environment.

3. A third major area for action embraces what may be termed *the international rules of the game.* Respecting and if necessary reinforcing these rules is an essential part of any programme designed to reduce uncertainty and increase confidence. How could we expect there to be any vigorous growth in activity, and particularly investment, if the general feeling was that, instead of policing itself, the economic world was slipping back into a sort of law of the jungle, with no holds barred? Here again there is enormous scope for action, and the improvements needed are many: everything relating to international trade in goods and services, ranging from increased transparency and discipline regarding measures that may distort competition, to early preparation of a new round of multilateral trade negotiations; everything that can facilitate the movement of capital for productive investment; everything that can clarify and make for greater stability of the legal conditions governing the conduct of economic activity.

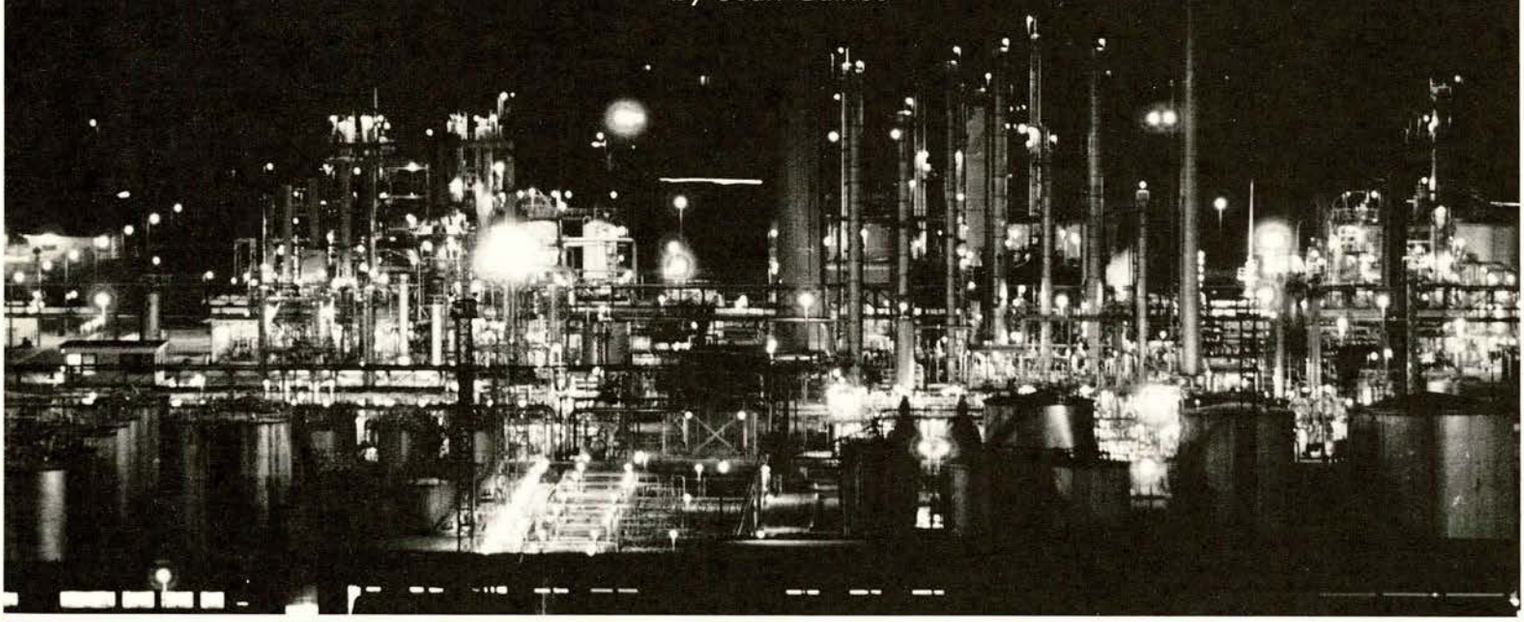
4. The fourth strand of this action programme is *the strengthening of relations with the developing world.* There is no panacea for the difficulties being experienced by the Third World. We must never lose sight of the fact that these difficulties vary in nature and relative intensity from one developing country to another. It follows therefore that the mix of remedies to be employed must also vary: financial aid, technical assistance, commercial and financial credits, direct investment, the opening up of markets, technology transfers. These difficulties also require that developing countries themselves show determination and perseverance in implementing effective national policies, for only in this way will economic development and social progress be soundly based.

5. *Sub-Saharan Africa,* which is at present the victim of a horrifying accumulation of misfortunes, has absolute priority need of immediate, generous and extremely varied aid, to come through its cruel and unjust trials.

Thus the present situation, after the substantial progress that our countries have achieved in controlling inflation and resuming economic growth, calls for a broad range of complementary action. Tenaciously pursued in a spirit of international co-operation, this will consolidate earlier achievements and strengthen the chances of sound, job-creating, growth.

The Petrochemical Industry: An Unfinished Adjustment Process

by Jean Guinet[1]



Long one of the leading sectors in industrial development, the petrochemical industry of OECD countries has, over the last fifteen years, undergone severe structural upheavals of which the two oil crises were the main but not the only cause. The consequence has been a pressing need for adjustment which became painfully evident in 1981-1982, at the time of the industry's most recent cyclical trough. Since then, the situation has improved, but the industry is still behind in making the necessary structural adjustments: supply and demand have not been re-equilibrated in a durable way in all countries. In addition, large new petrochemical manufacturers, especially in the Persian Gulf, are about to come onto the market, and their production will add to the pressures for adjustment.

A report, on which this article is based, weighs the consequences of these structural disturbances for the petrochemical industry as examined by OECD's Industry Committee.[2]

The current problems of the OECD's petrochemical industry can be explained by the conjunction of several factors.

- *Supply side:* The massive and repeated price rises of oil with their impact on the price of the basic raw material of this energy-intensive industry (see inset); the ageing of the main production technologies (which reduced the scope for further economies of scale and energy saving); the appearance of new competitors.
- *Demand side:* The maturing of many markets for the products of the industry which has caused lower growth of demand in the medium and long term (see inset page 8).

A History of Crisis

The petrochemical industry of most OECD countries has encountered difficulties in adapting to this new context, not only for technical reasons (the long lead time of investments), but also because of the magnitude and abruptness of the two oil shocks. In addition, the industry was slow to recognise that some of the changes were irreversible.

At first, many companies simply rationalised the use of feedstocks, hoping in this way to maintain their competitiveness and thus preserve their share of a market whose growth they had consistently overestimated. And they continued to build up capacity. Others, making the same erroneous assumptions about future demand, tried to take advantage of the strong

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

2. The Petrochemical Industry: Energy Aspects of Structural Change, *OECD 1985.*

market position they believed their privileged access to feedstocks secured them; thus during the 1970s, oil companies, especially in Europe, became heavily involved in petrochemicals without a compensating pullback on the part of the traditional producers – the chemical firms.

The effect on the supply/demand balance of the exaggerated optimism about future demand and the uncompensated vertical integration of the oil companies

TWO OIL SHOCKS: EFFECT ON AN ENERGY-INTENSIVE INDUSTRY

Only a few non-ferrous metals (aluminium and copper) are more energy intensive than petrochemical products. To meet its energy and raw material needs, the petrochemical industry uses three types of hydrocarbons: natural gas, the condensates of natural gas (especially ethane and liquified petroleum gas or LPG) and oil products, especially naphtha. Two thirds of these hydrocarbons are used as raw materials or "feedstocks" to synthesize the various compounds, and the remainder supply the energy needed by the industry, including production of its own electricity. The petrochemical industry accounts for a major share of the total consumption of liquid hydrocarbons (oil products and condensates of natural gas) consumed by industry as a whole in OECD countries (38 per cent in 1981 which amounts to 7.7 per cent of total OECD final consumption of these hydrocarbons).

However, the weight of the petrochemical industry in the energy market varies greatly from product to product and area to area. The reason is that patterns of feedstock use differ: in the United States, 70 per cent of the ethylene produced comes from condensates (propane, butane, but especially ethane) most of which are derived from natural gas *processing; in Europe and Japan, on the other hand, naphtha from* oil *refining is used as feedstock for 84 and 95 per cent respectively of the ethylene produced during the same period.*

The impact of the two oil-price shocks was almost totally confined to prices and only rarely affected the physical availability of the industry's raw materials. In Europe, for example, feedstock costs rose, as a share of total ethylene production costs, from 46 per cent in 1973 to 85 per cent by 1980. Rising feedstock costs have severely tested the OECD area's petrochemical industry which everywhere has been squeezed by the pressing need to pass on the increases into product prices to protect its profits and the impossibility of doing so in a period of severe economic recession.

Change in Competitive Positions

However, the differences in feedstock cost increases have brought about a marked shift in competitive positions, at least temporarily. The second oil shock, by increasing such prices in traditional producing countries, has ensured the competitiveness of the projects of the new petrochemical plants being built or planned in energy exporting countries, especially the Persian Gulf.

The price of naphtha in Europe and Japan, where it determines the economics of the industry, went up by a factor of almost 14 between 1972 and 1981 while, in the United States, the price of ethane which is the main feedstock, increased only eight times during the same period. (Moreover the price of naphtha in the United States, where it is less used, was lower than it was in Europe or Japan until 1981.) The result was to reinforce the competitive position of the American industry whose exports rose sharply in the second half of 1979 and 1980.

The effects of government intervention to a large extent explain these differences. In the United States and Canada, oil and natural-gas price controls attenuated world energy-market pressures for a long time. Other factors too have played a role (refinery structure, type of feedstock, structure of markets etc.) but a less important one. With the deregulation of oil and natural gas prices, the "undue" advantage accruing to American petrochemical producers has been disappearing. Since 1981, the competitive edge of the United States has been eroded as deregulation was reinforced by such other factors as a fall in the price of oil and hence of naphtha and petrochemical products in Europe but especially the rise of the dollar. Thus, in the traditional production areas (Japan, the United States, Europe), the purely economic factors are again coming to regulate competitive conditions.

Conversely, for the new producers, especially in the Middle East, it is largely political decisions, though sometimes backed up by economic considerations, that determine the competitiveness of feedstock prices and the viability of new projects.

More Rational Use of Energy

The energy industry was concerned with using energy more rationally well before the oil crisis, and energy consumption per unit of output fell more rapidly between 1965 and 1975 than during the succeeding years. Even so, both oil price shocks, but especially the second, were a considerable spur to energy conservation. Between 1973 and 1981, the petrochemical industry's unit energy consumption for the OECD as a whole fell on average by about 2 per cent a year. There were marked regional differences however: the United States' industry has always consumed much more energy per unit of output than its European and Japanese competition. It is difficult to unravel the various factors. Undoubtedly, the industry has made an effort to rationalise its use of hydrocarbons (energy management, improvement of processes), but factors having little to do with the energy market are also involved (differing age of the installations, change in the composition of production, cyclical fluctuations of activity etc.).

Changing the range of feedstocks is another way to adjust to the new energy situation. However, the changes made (increased use of LPG in Europe and gas oil in the United States) have not had any deep impact on feedstock patterns in the various production areas. The United States' industry is still dominated by natural gas condensates, especially ethane, the European and Japanese by naphtha. It should also be noted that more and more producers have unskilled crackers so as to have some flexibility in the choice of feedstocks and, as a result, to be able to adjust more effectively to changes in their availability and price.

Thus, despite the violent price shocks, the liberation of organic chemistry from petroleum and natural gas has not really been on the agenda, although, after the second oil crisis, renewed interest in coal-based synthetic gas seemed likely. The reversal of the oil market at the end of 1980 pushed back the prospects for a carbo or biochemical petrochemical industry.

Despite the importance of the efforts made and the unquestionable results obtained in rationalising energy use, the petrochemical industry has only been able to offset the cost hikes in energy on the economics of its operations to a limited extent and, as time has passed, results have been even more difficult to achieve.

was aggravated by three other factors:

- Construction of many new plants towards the end of the 1960s and the beginning of the 1970s, including an influx of American investment into Europe, had planted the seeds of instability well before the oil crisis of 1973. The large scale of the new plants made the supply structure more rigid than it had been.
- The emergence of CMEA countries as major petrochemical producers which started exporting, mainly to Western Europe, soon after the plants were completed.
- A first large wave of petrochemical investment into developing countries, especially in Latin America, which diminished the export potential of OECD countries.

In Europe and Japan, wide divergence between production capacity and petrochemical consumption trends plagued the industry throughout the 1970s and early 1980s. The result was great underutilisation of capacity during most of this period. In the United States, apart from the 1975 recession, the situation was more balanced up to 1979, but, during the following three years, it deteriorated badly. In the early Eighties, OECD's petrochemical industry plunged into the worst crisis of its history. The sharp decrease in consumption, which began in 1980, disequilibrated the market, and the situation was made worse by the fact that, until the end of 1981, production capacity continued to increase. Capacity utilisation fell to unprecedentedly low levels, sending unit production costs up just as prices were tumbling. This was due in part to the self-destroying competition engaged in by producers in the hope of increasing capacity utilisation. The imbalance was at its worst in 1982, coinciding with the cyclical trough in demand. In the case of ethylene, for instance, 15.6 million tons of capacity out of a total of 40.5 million tonnes in the OECD area were idle.

Faced with persistent recession and growing evidence of a radical change in long-term demand trends, producers finally began to reconsider their strategies at the end of 1981. Reducing excess capacity became a priority and, in less than two years, more then 3 million tonnes of ethylene capacity in Europe and 1 million tonnes in the United States were scrapped. The resulting improvement in the market situation was reinforced by a recovery of demand in 1983 which has continued since then. As to Japan, it has decided to cut ethylene capacity by more than a third by the end of this year.

Enough Adjustment?

Are the cuts in capacity made so far large enough to allow the industry to regain its equilibrium in a lasting way? The answer depends on how demand prospects are assessed and on the outcome of the ongoing process of international relocation of capacity, with corresponding changes in the structure of world trade in petrochemicals.

As to the perspectives for demand in the medium and long term, they should be cautiously assessed. The experience of the last ten years has been unsettling since the undue optimism which prevailed was an important cause of today's problems. Without going to the other extreme, it appears reasonable to think that the trend of the last ten years will probably continue or even accelerate: the lowering of unit consumption of certain important petrochemical products (due to thinner plastic films for packaging, for example) may slow down the long-term growth rate of demand. Overall, it seems probable that demand for bulk petrochemicals (particularly the main thermoplastics and their precursors) will grow about in line with the economy as a whole.

SLOWING DEMAND

The first signs of "senescence" of petrochemical markets appeared even before the first oil crisis in 1973 but went largely unnoticed at the time because economic activity was so brisk. The 1973 oil crisis and the ensuing economic recession seem simply to have amplified existing trends which deepened after the the second oil shock and the chronic hesitations that characterised economic growth. These trends may be summarised in a single word: maturation.

The substantial growth lead enjoyed by petrochemicals over most other industries shrank considerably from the end of the 1960s. One example: the production of the main petrochemicals (olefins, aromatics, plastics and synthetic rubber) by the four largest European producers (France, Germany, Italy, the United Kingdom) increased by only 1.5 per cent a year on average between the two cyclical peaks in 1974 and 1980. This is very slow compared to the 10 per cent rates the industry was used to during the 1960s. And it was almost no higher than industrial production as a whole (1.4 per cent).

The New Non-OECD Producers

Decentralisation of the Western world's petrochemical production to countries outside of the OECD area, which began in the late 1960s with the first wave of investment into a few developing countries, reflected changes in the world pattern of petrochemical markets (for example the advent of synthetic fibres). However, the two oil price shocks paved the way for a new type of relocation brought about by investment designed to add value to national energy resources (especially natural gas associated with oil production), by transforming them into petrochemical products, often for export. Projects of this kind proliferated after the first oil price shock, but it was only after the second shock that many actually took shape. Since this new investment wave was superimposed on the first, the redeployment of petrochemical activities to non-traditional production centres gained momentum. (See chart A.)

The development of production capacity based on natural gas outside the traditional production zones is without doubt one of the main features of structural change in the petrochemical industry during the 1980s. It is creating new export "poles" – especially in the Middle East and North Africa[3] and is accelerating the import substitution process in such developing regions as Latin America and Asia.

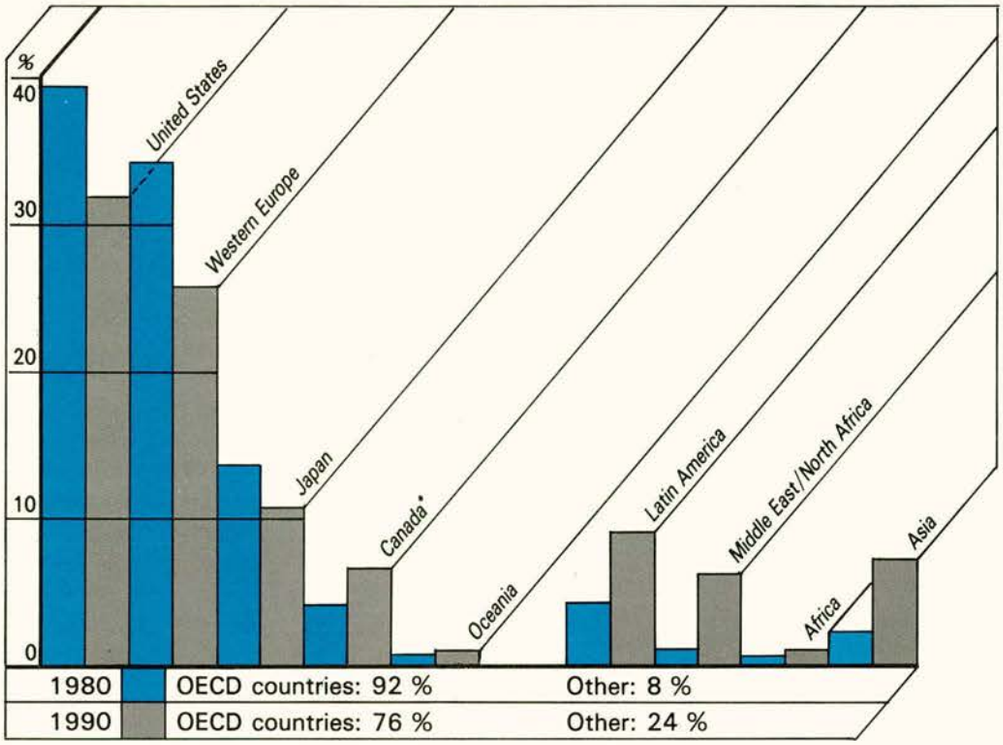
The Middle East and North Africa

It is in this part of the world that the emergence of new petrochemical production capacity has been most spectacular and is likely to have the most serious implications for OECD countries because local markets are so small. The scale of the projects under way is striking. Until recently, there was practically no petrochemical industry in this region apart from ammonia (the Middle East had about 5 per cent of world ammonia capacity in 1980). In the mid 1970s, petrochemical production amounted to only about 50,000 tonnes of ethylene, corresponding to downstream production of some 20,000 tonnes of polyethylene and 50,000 tonnes of polyvinylchloride (PVC).

The new generation of projects designed to use the natural gas associated with oil production – methanol and ethylene chain – took time to mature. From the point of view of energy resource management, *methanol* production is governed by rules

3. Canada, and especially the province of Alberta, has the potential to become an export pole for petrochemical products of a size comparable to that of the Middle East and North Africa. However because of a number of uncertainties, especially about the future of energy policy, it is difficult to foresee how the Canadian industry will develop. Only one thing is sure – that it will expand less, and less rapidly, than was foreseen just after the second oil shock.

A. THE CHANGING PATTERN OF WORLD ETHYLENE PRODUCTION CAPACITY[1]



1. So called name-plate capacity – what is foreseen by the construction firms on the basis of engineering calculations as against the effective capacity.
** Forecasts made at the beginning of 1984; see note 3 of the article.*

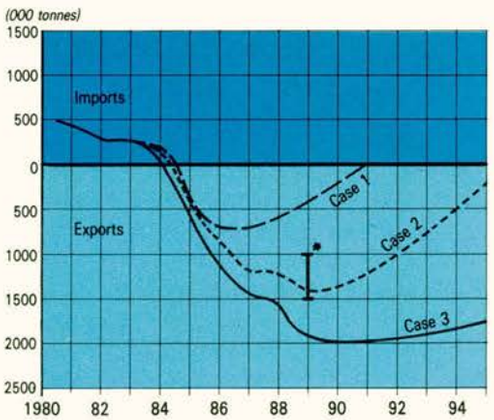
Source: Secretariat estimates from various sources.

similar to those of ammonia production: it adds value to the methane contained in natural gas and enables this gas to be exported in a form that minimises transport costs. However, the methanol market is less well established than that of ammonia. It has expanded only recently and is fairly complex since it is used both to make chemicals and as final energy (fuel, MTBE). Many methanol plants are now being constructed, and some have already come on line. The first methanol shipped from Saudi Arabia, for example, was delivered to Japan in the spring of 1983. It is expected that methanol production capacity in the Middle East and North Africa will be about 2 million tonnes by the end of the 1980s or almost 9 per cent of world capacity at that time.

The production of *ethylene* and certain of its derivatives allows the condensates in natural gas – and especially ethane – to be used rather than flared off. The first ethane cracker in the Persian Gulf, with a capacity of 280,000 tonnes, started up in Qatar in 1981. Another is in Algeria, and one has just come on line in Libya. Three ethane crackers with a total capacity of 1.6 million tonnes, are nearly completed in Saudi Arabia and scheduled to come on stream this year. There are other projects for the region, but some are linked to the Iraq-Iran War, and it is thus difficult to say when – or whether – they will be completed. Total installed ethylene capacity in the Middle East and North Africa will rise from about 800,000 tonnes today to about 2.4 million tonnes in 1985-86 and probably will stay at this level until 1990.

Several vital questions arise. What does this capacity represent in terms of export potential? What form will exports take? Where will they be sold and how competitive will they be?

B. NET TRADE IN ETHYLENE DERIVATIVES OF MIDDLE EAST AND NORTH AFRICA
(expressed in ethylene equivalent)



Case 1: Low production potential; 11.5 % annual rate of growth of domestic demand.
Case 2: High production potential; 11.5 % annual rate of growth of domestic demand.
Case 3: High production potential; 5 % annual rate of growth of domestic demand.
•: Most likely range.

Source: Secretariat estimates from various sources.

- *Export potential*

To answer these questions, one must make assumptions about what will happen to certain doubtful projects, what production rates will be and how fast internal demand will grow. Chart B presents several scenarios which show a wide range of possible hypotheses, especially about internal demand, and hence a wide range of forecasts for the exportable surplus. The most likely figure seems to be in the range of 1 to 1.5 million tonnes of ethylene equivalent, or about a quarter to a third of total international trade in 1990.

Since most crackers built in the Middle East and North Africa will use ethane as a feedstock, the range of export products will be limited. Two will be manufactured on a very large scale: polyethylene (especially linear low-density polyethylene, production of which could reach 1.3 million tonnes by 1990) and ethylene glycol (1 million tonnes). The output of other products – polyvinylchloride (PVC), polypropylene (PP), ethanol, and styrene – is likely to be much lower – from 100,000 to 400,000 tonnes.

Promoters tend to base their profitability studies on calculations that start downstream and proceed upstream: they begin with the price tag that products will need to bear if they are successfully to enter target markets (taking into account capital, operation and transport costs and, if necessary, customs duties). They then work out what feedstock prices must be if the project is to be viable. Given this pricing policy and the level of costs in competing areas, most experts agree that petrochemical production in the Middle East is quite likely to be competitive on most world markets.

- *Marketing policy*

Since, by 1985-86, the Middle East and North Africa will have large quantities of petrochemicals to sell on the world market, the question is what marketing policy will be adopted. Still traumatised by the recent crisis, which was of unprecedented duration and severity, certain OECD producers fear that this influx onto international markets could distort market forces and thereby complicate the industry's adjustment problem.

The Gulf producers have warned that it would be unacceptable to erect trade barriers against them – for example by applying the Generalised System of Prefences too restrictively. The Saudi Arabians in particular indicate they are aware of the need to enter the market in orderly fashion and that all of their sales will be made under contract – directly through their own com-

pany SABIC or through foreign partners (Mobil, Exxon and Shell) – and will be spread throughout world markets without unduly focussing on certain ones.

Nevertheless, these new producers will have a significant impact on international trade flows. Even if the Saudis add only 3.5 per cent to world ethylene capacity, the exportable surplus will be of another order – between a fourth and a third of world trade in products derived from ethylene. Should world trade be disrupted, the traditional producers will be tempted to argue that the new producers from the Gulf are able to compete because of subsidies (extremely low raw material prices, low interest rates). The latter will argue that their trade in manufactured products with OECD countries is very unbalanced and, moreover, that part of their petrochemical exports will be reimported in the form of products with a higher value added.

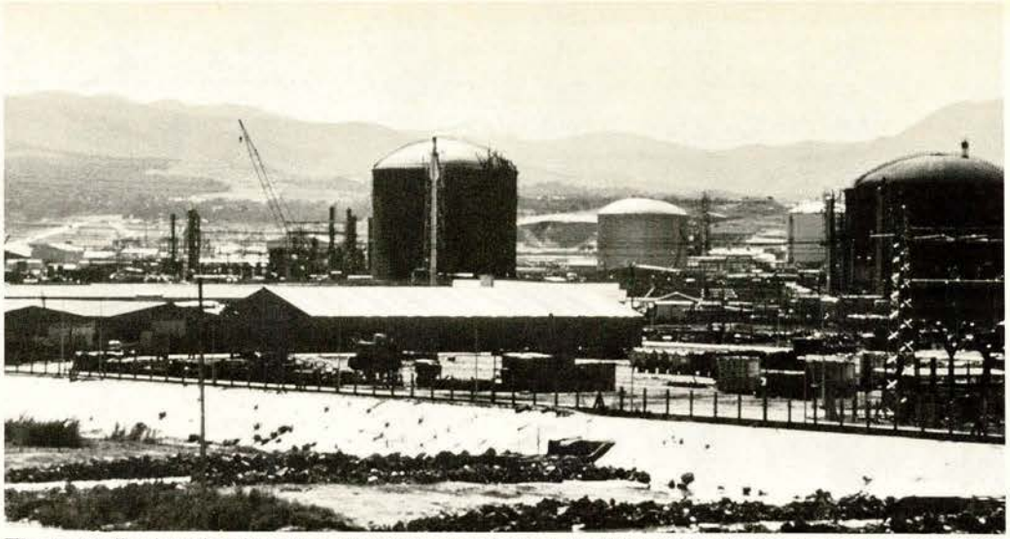
The entry of new producers will provide further impetus to structural adaptation on the part of existing petrochemical producers. However if they were to disrupt the market, this adjustment process would be impeded and there would follow a vicious circle of defensive measures which could spill over into other fields. But the responsibility for preventing such a scenario does not lie solely with the new producers. Certain established producers must resist the temptation to use the newcomers as scapegoats to explain away their own failure to adjust.

The Others

During the past decade, import substitution has taken place in several developing and newly industrialised countries. In those having large oil and gas reserves, the oil shocks gave further reason to develop petrochemicals. As a result, new petrochemical centres came into being in Latin America and Asia.

In Latin America, ethylene capacity totalled almost 2 million tonnnes in 1980 or slightly over 4 percent of total Western capacity, Brazil and Mexico being the main producers. In Asia – except for Japan – three countries (India, South Korea and Taiwan) had a combined ethylene capacity of a little more than a million tonnes in 1980. Finally, South Africa also developed a petrochemical base during the 1970s, and the planned-economy countries have shown spectacular growth. At the beginning of the 1980s, they had a capacity of 6.3 million tonnes (about as much as Japan), CMEA countries accounting for 5.3 million tonnes and China for 1 million. In spite of their growing production potential, all of these areas have until recently continued to be fairly large net importers of petrochemicals.

Foreseeing further rapid growth in domestic consumption, some petrochemical producing countries have decided to increase capacity, while others have entered the field for the first time. Mexico and Brazil pursued rather ambitious development programmes aimed at self sufficiency while, in Asia, where the growth in petrochemical demand should continue to be the largest in the world, many complexes are on the drawing boards or being built, mostly in countries which previously had no petrochemical industry (Indonesia, Malaysia, the Philippines, Singapore, and Thailand).



The two oil price shocks gave a boost to petrochemical industries in the countries where the energy resources are to be found. Above: Skidda in Algeria.

It is more difficult to assess the likely course of capacity growth in the planned economy countries. According to the official plans, by the end of this year, about 3 million tonnes of ethylene capacity – 2.3 million tonnes in Eastern Europe and 300,000 tonnes in China (and corresponding ethylene derivative capacity) should be added to the 6.3 million tonnes already existing in 1980. Some sources, however, indicate that there have been delays in putting the plans into effect, which makes longer term trends in capacity – up to 1990 – more uncertain.

Implications for OECD Producers

Very broadly, the implications for OECD countries may be summarised in a single sentence: the petrochemical industry in traditional areas of production will have to face increased competition in both export and domestic markets. Market forces and the ability of the industry to maintain its competitiveness will ultimately determine the end result. Changes in trade flows arising from the locational changes might cut annual growth in ethylene production in the United States and Europe by about 1 per cent and in Japan by almost 2 per cent over the period 1981-1990.

In view of this outlook, it is evident that the adaptation of the petrochemical industry in OECD countries must continue. Above all, it is necessary to bring capacity down to more appropriate levels in certain countries. If, as seems likely, Japan carries out its planned rationalisation programme, it is mainly in Europe, where excess capacity for ethylene is now more than a million tonnes, that the problem will remain. If some countries continue to have a "hard-core" of excess capacity, they will not be the only ones affected. The existence of disequilibria in one zone distorts competition world-wide, and the effects spread rapidly throughout the petrochemical industry. The coming years will test the ability of market mechanisms to ensure the harmonious coexistence of both new and old producers. It will be essential to maintain the framework of open international trade, and both industry and governments must avoid repeating the errors made in other sectors such as steel.

Restoring an overall equilibrium between supply and demand, however, will not necessarily guarantee the lasting economic viability of the petrochemical industry in traditional producing areas. The 1981-82 crisis showed that it is necessary to reconsider the very structure of the industry if it is to adapt to the present phase of market maturity and the new energy supply conditions. Various types of readjustment are being implemented or planned, with or without direct government involvement: consolidation by merger or the exchange of capacity between enterprises in order to remedy the fragmentation of supply; various types of strategic reorientation of individual firms, including greater emphasis on more specialised downstream petrochemical activities.

Finally, firms must never lose sight of the need to prepare now for the inevitable long-term changes in the petrochemical sector that will be needed to offset the depletion of conventional oil and gas reserves. Consequently, along with continuous efforts to improve existing processes and products, the industry must continue to develop technologies that will enable them to use alternative raw materials such as coal.

China's Early Windows on the World: The Special Economic Zones

by Michael West Oborne[1]

The Chinese programme of the "Four Modernisations" – in agriculture, industry, science and technology and the military – has borne fruit. Innovative forms of agricultural production have been introduced. The industrial system has been reformed to take into account elements of a market economy in pricing and the allocation of resources and to allow more regional and local autonomy. A new fiscal system allows firms to keep a portion of their profits – and to be responsible for their losses – as well as to pay taxes rather than simply remitting their profits to the state. Likewise the banking system now has a separate central bank which will play a semi-independent role in economic management. Finally the Open Door Policy begun in 1978 permits foreign investment and encourages foreign trade. These new policies are of great interest to OECD countries as investors and because an interdependent China will vastly increase world trade.

The decision of the Chinese authorities to create a "Chinese socialist" economy, able to combine effectively the experience of the advanced industrial countries with the political and social imperatives of the world's largest developing country owes much to an experiment launched in 1979: the so-called Special Economic Zones have been the laboratories for economic and administrative reform and the channels through which foreign ideas and practices have been adapted to Chinese development needs. The following article reviews the history of these zones and the implications of their extension to the Chinese economy as a whole[2].

Since 1978, China has recognised that industrial development entails large-scale technology imports. For a short period, import policy favoured large turnkey operations in heavy industry, and agreements to purchase such plants rose dramatically from 1.2 per cent of imports in 1979 to 28.8 per cent in 1981. But by late 1980 this approach had proven too expensive and unmanageable. It was replaced by a new policy called "readjustment" which favoured a slower, more balanced growth, giving priority to agriculture and light industry. Foreign direct investment was reintroduced into China in 1979, for the first time in thirty years.

To attract such investment, especially into the industrial sector, four Special Economic Zones were established in 1979, by decision of the State Council. One purpose was to test new policies before applying them to the domestic economy as a whole. These zones were to be the vanguard in an overall effort to change the planning mechanisms of the socialist economy, introducing modified forms of market economies and were meant to attract foreign as well as domestic Chinese investment. Thus they were to serve as a means of integrating China into the world economy without opening up the whole economy of the country to trade liberalisation and deregulation.

Designed on the model of "offshore" export-processing zones elsewhere in Asia, the Special Economic Zones have gone far beyond the narrow confines of other such experiments. Located in or near traditional trading cities (see map), each of them except Shantou has a large complementary economy (Shenzhen and Zhuhai have Macao and Hong Kong, and Xiamen has Xiamen City) and strong ties to large overseas Chinese populations. The idea was that first the overseas Chinese populations, then other foreigners, would supply investment and technology through the medium of co-operative agreements – joint ventures, coproduction, countertrade and processing agreements. China's export capacity would be enhanced, and the local employment situation would improve. The zones were to have market-style features including new pricing mechanisms and the setting of exchange rates and some market allocation of goods. Acquisition of new skills in management and foreign trade would be encouraged.

An incentive system designed to attract the desired foreign investment included tax holidays, low land and utility prices, comparatively low wages, duty-free allowances on production materials, flexibility in recruiting and firing workers and depreciation allowances. Foreign staff working within the zones would have the right, after paying taxes, to remit foreign currency as would foreign enterprises or joint ventures which need to send profits outside of China. A large degree of autonomy was given to the local authorities to negotiate other terms favourable to foreign firms, providing their investments were large enough and brought in new technologies.

Early in the experiment there was a certain reluctance on the part of foreign investors to sign agreements with the Chinese because they had no specific legal protection. Consequently, the Chinese

1. *Research staff, OECD's Development Centre.*

2. *Based on research to be published by OECD.*

authorities began elaborating a special preferential legal code to protect the foreign firms within the zones. (This code now has 12 articles and continues to evolve, along with the legislation on foreign investment for the nation as a whole.) Initially, there were also delays in building the necessary infrastructure, especially in Zhuhai and Shantou.

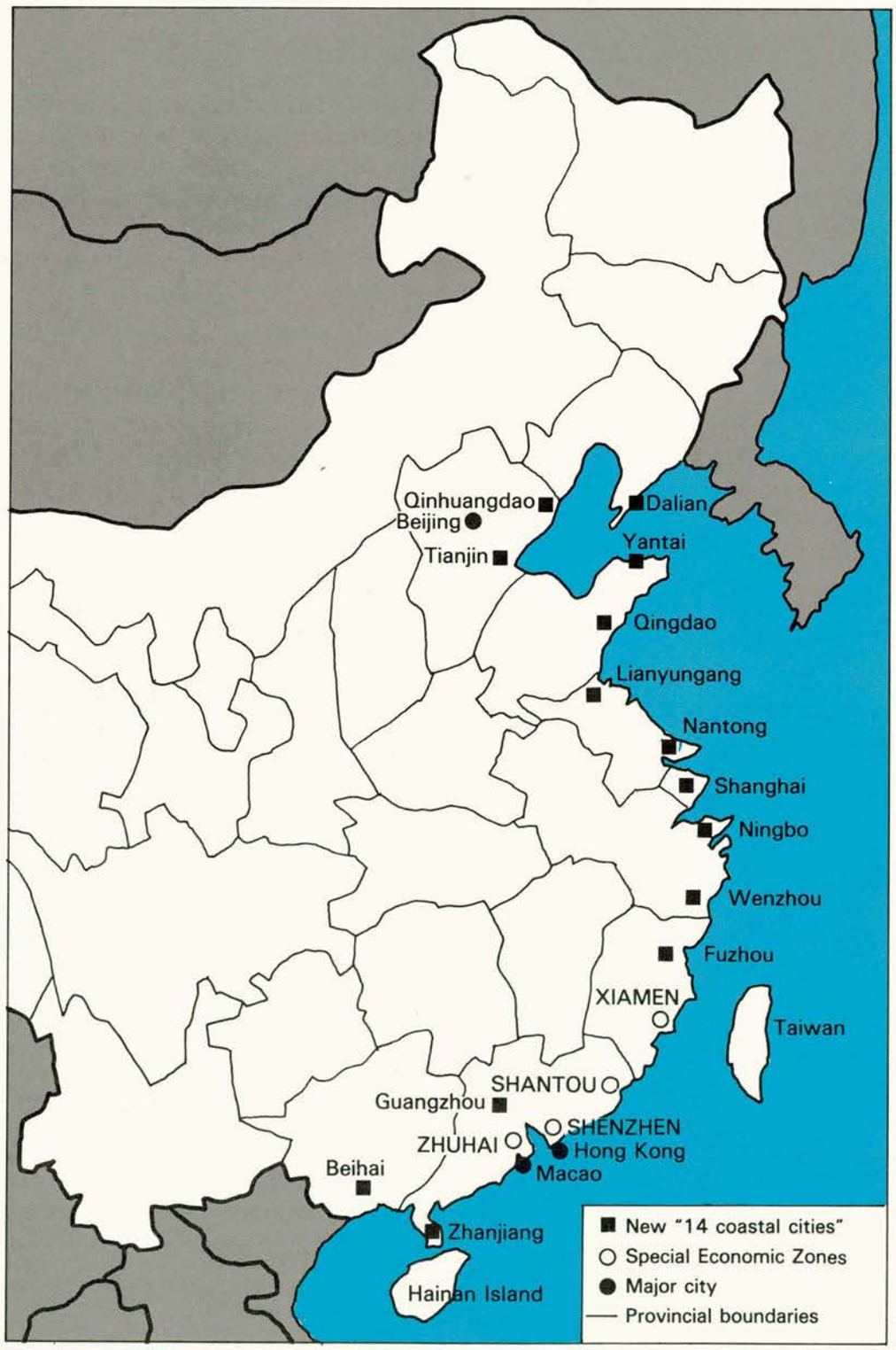
However, despite the slowdown in world economic growth, the zones have caught on. Foreign investment in China as a whole had risen to $8 billion by June of 1984, and the Special Economic zones accounted for roughly half of that amount (see table 1). (By the end of 1984, total investment had reportedly reached $10 billion, and the zones' contribution had surpassed the 50 per cent mark.)

1. FOREIGN DIRECT INVESTMENT IN THE SPECIAL ECONOMIC ZONES JUNE 1984

Item	*Shenzhen*	*Zhuhai*	*Xiàmen*	*Shantou*
Number of contracts	3 272	1 200	110	59
Pledged Investment *(million US$)*	1 800	1 500	470	5.5*

(*) to the end of 1983.
Source: Intertrade, *December, 1984.*

CHINA'S SPECIAL ECONOMIC ZONES



A Shining Example

The Shenzen zone has had the most success. Located behind Hong Kong, it has established close links with both Hong Kong and the world beyond. More than 250,000 people now live and work in the zone – ten times the 1978 population. The Chinese authorities have spent more than a billion dollars (US) on infrastructure over the last five years, completing 29 highway links and building a complete city in Shenzhen. More than 3,272 agreements with foreign companies have been signed, many of them for the blossoming industrial park in Shekou. Of the US$1.8 billion pledged investment for Shenzhen, more than 40 per cent (see table 2, page 21) has gone to industry, and more than 30,000 machines, mostly labour intensive by Western standards, have been introduced. Gross industrial output for the zone has been estimated at some US$4 billion for 1983, one third of it coming from joint ventures and foreign firms.

Initially, investors were reluctant to go into industry on a large scale, preferring to invest in real estate and the service sectors (table 2). However more of the investment pledged to industry has actually been realized, partly because of the high initial capital outlays involved in industrial investment.

And the Others

In the last two years, the other three zones have come to the fore. Xiamen, located opposite Taiwan, has built a large industrial park designed to accommodate over 200 light industries in electronics, textiles, and light consumer goods. Xiamen should become fully operational within the next twelve months.

Shantou with the smallest foreign investment (US$5.5 million) is part of a city that has long been involved in foreign trade. It has more than 370 industrial firms, mainly in light industry, as well as tourist resorts and hotels. Zhuhai is adjacent to Macao and will be largely comple-

(continued on page 21)

The OECD Member Countries

1985 Edition – 21st 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 **1983**. 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.

THE OECD OBSERVER
No. 133 – MARCH 1985

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

a) Standardised unemployment rates.

	AREA	AGRICULTURAL AREA	TILLAGE	POPULATION		CRUDE BIRTH RATES
	1,000 sq. km	1,000 sq. km	1,000 sq. km	thousands	per sq. km	per thousand
AUSTRALIA	7,686.8	4,908	465.4	15,379	2	15.8
AUSTRIA	83.9	37	16.3	7,552	90	11.9
BELGIUM	30.5	15	8.3	9,860	323	11.9
CANADA	9,976.1	702	461.8	24,904	3	15.1
DENMARK	43.1	29	26.5	5,114	119	9.9
FINLAND	337.0	25	23.6	4,855	14	13.8
FRANCE	547.0	314	186.2	54,729	100	13.7
GERMANY	248.6	121	74.6	61,423	247	9.7
GREECE	132.0	92	39.3	9,848	75	13.6
ICELAND	103.0	23	0.1	237	2	18.5
IRELAND	70.3	58	9.7	3,508	50	19.0
ITALY	301.2	175	124.2	56,825	189	10.6
JAPAN	372.3	54	48.3	119,259	320	12.9
LUXEMBOURG	2.6	1	0.6	366	141	11.5
NETHERLANDS	37.3	20	8.6	14,362	346	11.8
NEW ZEALAND	268.7	155	4.7	3,226	12	15.8
NORWAY	324.2	9	8.4	4,130	13	12.1
PORTUGAL	92.1	41	35.5	10,099	110	14.4
SPAIN	504.8	312	204.9	38,173	76	13.4
SWEDEN	450.0	37	29.7	8,331	19	11.0
SWITZERLAND	41.3	20	4.1	6,482	157	11.4
TURKEY	780.6	367	272.8	47,750	61	32.8
UNITED KINGDOM	244.8	183	69.8	56,377	231	13.0
UNITED STATES	9,363.1	4,282	1,906.2	234,496	25	15.5

TOTAL LABOUR FORCE			UNEMPLOYMENT RATE	
thousands	*of which:* Females	Female Labour Participation Rate	as % of total labour force	
	%	%	1983	1984
7,055	37.3	52.2	(a) 9.9	(a) 8.9
3,294	38.8	54.0	(a) 4.1	..
4,213	38.8	49.6	(a) 13.9	(a) 14.0
12,258	41.5	60.1	(a) 11.8	(a) 11.2
2,732	45.4	74.1	11.4	..
2,574	47.2	73.5	(a) 6.1	(a) 6.0
23,283	39.4	52.2	(a) 8.0	(a) 8.9
27,445	38.4	49.7	(a) 8.0	(a) 8.1
3,808	34.1	36.7	7.9	..
111	31.5	45.9	0.9 1982	..
1,309	29.7	34.9	14.1	..
23,185	34.3	40.9	(a) 9.8	(a) 10.1
58,886	39.5	57.2	(a) 2.6	(a) 2.7
161 1982	(29.8) 1982	41.3	1.2 1982	..
5,814	34.0	40.3	(a) 13.7	(a) 14.0
1,340 1982	34.4 1982	45.1	3.5 1982	..
2,024	42.9	66.1	(a) 3.3	(a) 3.0
4,356 1982	41.5 1982	57.6	7.3 1982	..
13,699	29.7	33.2	(a) 17.4	..
4,375	46.6	76.7	(a) 3.5	(a) 3.1
3,020	35.3	48.9	0.9	..
18,993	..	48.0	18.8	..
26,776	39.6	58.1	(a) 13.1	(a) 13.2
113,226	43.0	61.7	(a) 9.5	(a) 7.4

TOTAL CIVILIAN EMPLOYMENT			
thousands	*of which:* AGRICULTURE FORESTRY AND FISHING	INDUSTRY	SERVICES
	%	%	%
6,289	6.6	28.5	64.9
3,159	9.9	38.8	51.3
3,577	3.0	30.9	66.1
10,734	5.5	25.5	69.0
2,389	7.4	28.3	64.3
2,380	12.7	33.2	54.2
20,839	8.1	33.8	58.1
24,649	5.6	42.0	52.4
3,508	30.0	28.6	41.4
(110)	(11.2)	(37.1)	(51.7)
1,111	17.1	29.7	53.2
20,350	12.4	36.1	51.5
57,330	9.3	34.8	56.0
160 1982	5.6 1982	38.1 1982	56.3 1982
4,929	5.1	27.8	67.1
1,282 1982	11.4 1982	32.9 1982	55.7 1982
1,957	7.5	28.1	64.3
3,959 1982	25.9 1982	37.1 1982	37.0 1982
10,805	18.0	33.5	48.4
4,224	5.4	29.9	64.7
2,994	7.1	37.6	55.3
14,927	58.9	16.6	24.5
23,470	2.7	33.6	63.8
100,834	3.5	28.0	68.5

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
GROSS DOMESTIC PRODUCT at market prices	at current prices and exchange rates billion US $ 1984	*(172.5)*	*(64.9)*	*(76.3)*	*(334.1)*	*(55.1)*	*(51.6)*	*(496.8)*	*(616.1)*	*(33.0)*	*(2.3)*	*(17.6)*	*(352.3)*	*(1,233.5)*	*(3.1)*	*(123.8)*	*(21.8)*	*(54.8)*	*(19.7)*	*(160.4)*	*(96.0)*	*(92.1)*	*(47.9)*	*(426.3)*	*(3,627.9)*
	at current prices and exchange rates billion US $ 1983	155.52	67.13	80.09	324.00	56.36	49.39	519.21	653.08	34.53	2.26	17.96	352.84	1,155.98	3.19	131.99	23.01	55.06	20.67	158.15	91.88	97.12	49.72	455.08	3,275.73
	average annual volume change 1978-83 %	2.2	2.1	1.1	1.3	1.4	4.1	1.5	1.2	1.0	0.9	2.3	1.4	4.1	0.0	0.3	1.9	2.8	2.8	1.0	1.7	1.6	2.3	0.8	1.1
	average annual volume change 1983-84 %	*(6.25)*	*(2.25)*	*(1.75)*	*(4.25)*	*(3.75)*	*(4.25)*	*(1.75)*	*(2.5)*	*(2.25)*	*(–1.25)*	*(3.25)*	*(3.0)*	*(5.75)*	*(0.75)*	*(1.25)*	*(2.5)*	*(3.25)*	*(–2.25)*	*(2.25)*	*(3.25)*	*(2.5)*	*(5.5)*	*(2.0)*	*(6.75)*
	per capita at current prices in US $ using current exchange rates	10,119	8,892	8,126	13,008	11,020	10,155	9,538	10,633	3,505	9,523	5,120	6,208	9,693	8,721	9,190	7,183	13,333	2,055	4,137	11,029	14,930	1,041	8,072	13,969
	per capita at current prices in US $ using purchasing power parities (PPP)	..	10,010	10,690	13,803	11,538	10,220	11,276	11,447	5,512	..	6,740	8,711	10,739	11,381	10,247	..	12,999	4,549	6,977	..	..	..	9,802	13,969
FINAL PRIVATE CONSUMPTION EXPENDITURE % of GDP at current prices		62.1	57.8	65.2	56.6	54.5	54.2	64.2	56.8	66.6	63.3	59.0	62.5	59.4	61.4	60.5	59.3	47.9	69.3	69.3	51.9	62.7	73.8	60.3	66.2
CURRENT GOVERNMENT EXPENDITURE AND REVENUE	current disbursements % of GDP	32.7 1982-83	44.8 1982	53.5	42.2 1982	58.2	36.1	47.5 1982	44.4	38.3	27.6 1980	50.5 1981	51.5	27.3 1982	45.7 1980	58.3 1982	..	45.6 1982	37.5 1981	31.8 1982	62.2 1982	30.8	..	44.3	36.9
	current revenue % of GDP	34.2 1982-83	46.7 1982	44.6	39.0 1982	53.1	37.4	46.9 1982	45.2	33.1	36.0 1980	42.3 1981	45.3	30.2 1982	51.5 1980	55.8 1982	..	52.8 1982	33.2 1981	30.7 1982	59.7 1982	33.9	..	42.5	31.7
GROSS FIXED CAPITAL FORMATION private and public	total % of GDP at current prices	21.3	22.2	16.1	19.5	16.3	24.6	19.6	20.8	20.5	23.1	22.6	18.0	28.4	23.2	18.2	23.1	25.1	28.9	18.9	18.7	23.3	18.7	16.5	16.8
	machinery and equipment % of GDP at current prices	10.9 1982-83	9.7 1982	5.8 1982	7.6 1982	7.2	8.3	9.1 1982	8.6	8.3	6.0	13.1 1981	6.9	10.2 1982	9.2 1980	7.3	8.9 1982	8.9 1982	13.7 1981	5.9	6.9 1982	7.2	7.6 1981	8.7	6.9
NET NATIONAL SAVINGS RATIO % of GDP		10.5	10.3	5.2	7.3	5.2	9.4	6.6	9.2	8.0	3.7	7.5	6.9	15.7	(57.3)	10.3	13.8	14.0	(17.0)	7.2	4.3	17.5	(10.9)	6.0	2.2
NET OFFICIAL DEVELOPMENT ASSISTANCE to developing countries and multilateral agencies % of GNP		0.49	0.23	0.59	0.45	0.73	0.33	0.74	0.49	..	..	..	0.24	0.33	..	0.91	0.28	1.06	..	..	0.85	0.32	..	0.35	0.24
GROSS DOMESTIC EXPENDITURE ON R & D % of GDP		1.0 1981	1.2 1981	1.4 1979	1.4	1.1 1981	1.3	2.1	2.6	0.2 1981	0.8 1981	0.8 1982	1.2	2.5 1982	..	1.9	(1.0) 1981	1.3 1981	0.4 1982	0.4 1981	(a) 2.2 1981	(2.3) 1981	..	(2.3)	2.7
TRADE BALANCE (goods and services) % of GDP		–1.4	0.8	1.4	3.3	2.1	0.4	–0.6	2.1	–9.8	3.2	–2.5	0.6	1.9	–3.8	3.8	–0.6	8.1	–12.8	–0.7	2.3	–0.2	–4.9	1.1	–1.7
TOTAL OFFICIAL RESERVES million SDR 31.12.1984		7,869	5,070	5,853 BLEU	3,246	3,127	2,866	25,458	44,261	1,117	132	2,122 (Oct.)	23,527	27,811	5,853 BLEU	10,961	1,995	9,596	1,226	12,838	4,135	18,520	1,418	10,295	33,517

BLEU : Belgium-Luxembourg Economic Union.

		AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
CURRENCY	monetary unit	Australian Dollar	Schilling	Belgian Franc	Canadian Dollar	Krone	Finnish Mark	French Franc	Deutsche Mark	Drachma	Krona
	units per US $ 31st December 1984 at market rates	1.21	22.05	63.08	1.32	11.26	6.53	9.59	3.15	128.49	40.49
	units per SDR 31st December 1984	1.18	21.61	61.83	1.30	11.04	6.40	9.40	3.09	125.94	39.74
IMPORTS *(goods only)*	total (CIF) million US $	19,398	19,392	54,097 BLEU	61,333	16,241	12,840	104,968	151,918	9,633	829
	from other OECD countries million US $	14,408	15,264	45,975 BLEU	54,131	13,632	8,206	75,114	116,424	6,294	711
	from rest of world million US $ (excl. unspecified)	4,896	4,128	8,083 BLEU	7,202	2,609	4,634	28,994	35,395	3,338	118
	total imports as percentage of GDP at current prices	12.5	28.9	65.0 BLEU	18.9	28.8	26.0	20.2	23.3	27.9	36.7
	volume change of total imports from 1978 to 1983 percentage per year	–1.0	3.2	0.6 BLEU	0.9	0.3	5.5	3.1	1.5	2.9	. .
EXPORTS *(goods only)*	total (fob) million US $	20,751	15,428	51,842 BLEU	73,810	16,002	12,523	91,195	168,748	4,459	750
	to other OECD countries million US $	12,484	11,057	43,784 BLEU	64,710	13,186	7,778	63,306	129,115	2,835	634
	to rest of world million US $ (excl. unspecified)	7,479	4,371	7,542 BLEU	9,100	2,793	4,745	27,727	39,092	1,616	116
	total export as percentage of GDP at current prices	13.3	23.0	62.3 BLEU	22.8	28.4	25.4	17.6	25.8	12.9	33.2
	volume change of total exports from 1978 to 1983 percentage per year	2.4	5.0	2.6 BLEU	2.5	6.1	4.5	3.1	2.2	3.1	. .
CONSUMER PRICES	increase 1984 % (Dec. 83-Dec. 84)	2.6	5.0	5.3	3.8	5.6	6.1	6.7	2.0	18.2 Nov.	14.9
	average annual increase 1979-1984 % per year	9.0	5.5	7.4	8.7	9.4	9.7	11.1	4.5	(23.4)	54.0
INDUSTRIAL PRODUCTION CHANGE 1984 (Dec. 83-Dec. 84)		5.0 Oct.	2.3 Nov.	–0.2 Nov.	5.6 Nov.	. .	3.8 Nov.	–1.5	2.9	6.6 Oct.	. .
INTERNATIONAL TOURISM	receipts as % of GDP	0.7	6.9	2.0 BLEU	0.8	2.3	1.0	1.4	0.8	3.4	1.1
	expenditure as % of final private consumption	1.8	6.2	3.8 BLEU	2.1	3.9	2.3	1.3	4.0	1.0	3.4

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
Irish Pound	Lira	Yen	Luxem-bourger Franc	Guilder	New Zealand Dollar	Krone	Escudo	Peseta	Krona	Swiss Franc	Turkish Pound	Pound	Dollar
0.997	1,934.24	251.13	63.08	3.55	2.09	9.09	169.29	173.40	9.00	2.59	444.44	0.86	1.00
0.977	1,897.57	246.13	61.83	3.48	2.05	8.91	165.93	169.97	8.81	2.53	435.93	0.85	0.98
9,181	80,326	126,367	54,097 BLEU	61,408	5,327	13,486	7,995	29,119	26,115	29,090	9,377	100,111	258,048
8,490	48,965	47,812	45,975 BLEU	45,599	4,171	11,973	5,550	15,633	21,795	25,173	4,514	81,722	149,740
647	31,285	78,552	8,083 BLEU	15,796	1,144	1,513	2,402	13,452	4,319	3,918	4,863	18,206	108,306
51.1	22.8	10.9	65.0 BLEU	46.5	22.6	24.5	38.7	18.4	28.4	30.0	18.9	22.0	7.9
2.1	1.6	0.5	0.6 BLEU	0.2	3.3	2.3	..	..	4.6	3.4	6.9	2.4	0.1
8,658	72,777	146,974	51,842 BLEU	65,413	5,192	17,984	4,556	19,791	27,430	25,594	5,762	91,829	200,538
7,597	49,816	75,424	43,784 BLEU	55,698	3,348	16,298	3,768	12,851	22,510	18,972	2,770	68,644	120,126
934	22,177	71,551	7,542 BLEU	8,491	1,776	1,686	713	6,774	4,920	6,622	2,991	22,987	80,123
48.2	20.6	12.7	62.3 BLEU	49.6	23.2	32.7	22.0	12.5	29.9	26.4	11.6	20.2	6.1
7.1	2.0	6.3	2.6 BLEU	2.9	4.4	4.2	..	..	4.8	1.0	9.9	1.4	–0.2
6.7	9.2	2.6	2.3	2.8	9.4	5.9	21.2	9.0	8.2	2.9	43.3	4.6	4.0
14.9	16.1	3.9	7.6	5.0	12.3	10.1	22.6	13.6	10.2	4.4	46.1	9.5	7.4
13.7 Oct.	2.6	9.0	..	4.1 Nov.	..	4.0	–0.2 Sept.	6.1 Oct.	13.5	..	..	–1.2	6.2
3.3	2.5	0.1	2.0 BLEU	1.1	1.0	1.2	4.0	4.3	1.1	3.1	0.8	1.2	0.0
3.9	0.8	0.6	3.8 BLEU	4.0	3.3	6.0	1.6	0.8	3.3	3.6	0.3	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
9.6	11.9	11.2	9.1 1982	8.0	6.0 1982	8.9	10.3	14.6	7.1 1982

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
9.8	12.4	6.2	11.2	8.4	12.0 1982	8.1 1982	19.0	9.6 1982	6.8 1982	8.0	..	10.2	11.2 1982

ANIMAL PROTEIN
grams per inhabitant and per day 1982

AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
64	59	66 BLEU	67	72	76	79	68	..	..

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
72	58	38	66 BLEU	69	69	67	42	57	72	71	20	57	73

PUBLIC EXPENDITURE ON EDUCATION 1982
as % of GDP

	AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
	5.8 1981	5.9	6.1 1981	7.7	6.6 1980	5.5	3.4 1980	4.7 1980	2.2 1979	..
of which: associated expenditure[1]	0.3 1981	0.3	0.1 1981	0.5	0.4 1980	1.0	0.2 1980	0.3 1980	0.4 1979	..

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
6.3	5.0 1979	5.1	8.6	7.2	4.9 1983	8.0 1980	4.5 1981	2.6 1979	7.6 1983	5.2	2.2	5.6 1980	5.8 1980
0.4	0.1 1979	0.2	0.6	0.4	0.3 1983	0.3 1980	0.3 1981	0.1 1979	1.0 1983	0.1	..	0.8 1980	0.7 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.	83.3	78.3	76.7	87.6	61.4	73.6	85.3	72.8	86.7	..
incl.	87.1	92.2	89.2	90.8	64.5	80.3	92.9	77.8	86.7	..

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY[2]	UNITED KINGDOM	UNITED STATES
77.5	80.1	92.0	85.1	62.0	78.3	75.2	83.0	86.0	66.6	83.8	58.6	72.9	78.1
81.0	80.1	92.0	94.1	70.2	82.5	83.0	87.7	87.2	74.1	88.3	58.6	81.8	78.1

1. Average earnings in manufacturing: one-earner family, 2 children. 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
4.71	3.41	4.01	8.49	3.25	5.05	3.43	4.13	1.66	5.95

IRELAND	ITALY	JAPAN	LUXEMBOURG[1]	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
2.42	2.32	2.93	8.03	4.02	3.75	6.11	1.24	1.89	5.84	3.94	0.79	3.44	7.37

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	460	417	664	718	570	541 1982	571	336	525

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
235	404	535	547 1979	575	622	579	166	345	889	789	55	524	760 1982

TELEVISION SETS
number per 1,000 inhabitants 1982

	AUSTRALIA	AUSTRIA	BELGIUM	CANADA	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	ICELAND
L	..	306	(304)	..	366	348	313	354	..	288
R	428	..	..	460	..	415	369	..	174	..

IRELAND	ITALY	JAPAN	LUXEMBOURG	NETHERLANDS	NEW ZEALAND	NORWAY	PORTUGAL	SPAIN	SWEDEN	SWITZERLAND	TURKEY	UNITED KINGDOM	UNITED STATES
(181)	(238)	255	..	305	..	315	149	..	(387)	..	106	..	..
241	405	560	258	..	289	..	..	256	..	370	119	457	646

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

China's Early Windows on the World: The Special Economic Zones

(continued from page 12)

mentary to the fast growing Macao economy, as well as to that of nearby Hong Kong. Of the US$1.5 billion in investment pledged by December, 1984, most will be in infrastructure, and the hope is to attact electronic industries, building materials and textile plants, chemical and food-processing operations. Agreed projects include glassware, lumber, microwave telecommunications equipment and beer brewing – all for export.

Prospects

While it is too early to report on investment returns, it is clear that there is a rising interest in the zones on the part of OECD firms. The origin of investment in one particularly well defined co-operative agreement – that of equity joint ventures – is shown in table 3. OECD area investment is over 50 per cent of total foreign direct investment in equity joint ventures. But Hong Kong investment is about 80 per cent of foreign investment of all kinds. This predominant role is no doubt due to the proximity of Hong Kong to Shenzhen, the biggest zone, coupled with cultural and linguistic affinities and the relatively low cost of relocating light industry and assembly operations. The traditional interest of Hong Kong residents in real estate investment is reflected in the large amount of this type of investment. In future, Shenzhen, and to some extent Zhuhai, are destined to play a greater role in linking the Macao-Hong Kong economies to the rest of China.

Hong Kong's frontier with Shenzhen, the largest of the special economic zones.

2. STRUCTURE OF FOREIGN INVESTMENT IN SHENZHEN, DECEMBER, 1983

Sector	*(1) Pledged Investment %*	*(2) Realised Investment %*	*(3) Average size contract (HK $ mill.)*
Industry	12.0	43,6	0.9
Real Estate	68.0	26.5	146.6
Tourism/Commerce	12.8	12.6	17.1
Other	6.2	17.3	1.9

Source: Official figures of Shenzhen Special Economic Zone.

3. COUNTRY OF ORIGIN FOR EQUITY JOINT VENTURES IN THE SPECIAL ECONOMIC ZONES

Country	*Number of Ventures[1]*	*Total Investment million $US*	*Foreign Investment million $US*	*Foreign Share of Total Investment %*
Hong Kong	32 (33)	67.7	36.1	53.3
Hong Kong + 1 foreign partner	2 (3)	1.5	1.3	91.0
United States	5 (8)	58.9	29.2	49.6
Japan	3 (9)	70.6	42.3	64.5
Singapore	1 (3)	20.0	6.0	30.0
United Kingdom	2	7.7	3.8	49.4
Germany	1	27.5	13.7	50.0
Philippines	1	4.5	2.3	51.0
Denmark	1	5.0	2.5	50.0
France	0 (1)	n.a.	n.a.	n.a.
Switzerland	1	0.4	0.2	50.0
Finland	1	n.a.	n.a.	n.a.

1. *Figures in parenthesis include joint ventures for which no detailed data on foreign investment exist.*

Source: OECD Development Centre data base.

Among investors in the OECD area, it is firms from Japan, the United States and Germany that have signed the largest contracts. By locating in China, foreign firms are both seeking to lower production costs and to gain experience in trading with China. Although the Special Economic Zones were initially designed as export bases, there has been a growing tendency for the Chinese authorities to give incentive packages which also allow goods produced within the zones to have access to the Chinese domestic market. Foreign industrial firms can now negotiate such access for some part of their production, providing the type of goods produced is already being imported into China.

In fact, the greatest effect of the zones will probably be on the domestic rather than the international economy. China still

exports many of its goods through the large ports of Shanghai, Tianjin and to some extent Guangzhou rather than through the special zones which serve rather as economic and social experiments where Chinese can meet foreign partners and get to know one another under regulated conditions. They are also areas where foreign technology can be absorbed by joint venture firms, often in the form of equity participation on the part of Chinese companies, and later imported into China itself. Since Chinese enterprises can form joint ventures within the special zones with both foreign partners and the zones' municipal authorities, new production and management techniques can be absorbed and transferred "inland" later on (the policy of "nei lian" or "uniting with the interior"); more than 600 co-operative agreements between "inland" enterprises and foreign firms or development authorities exist in Shenzhen alone.

Enlargement

Already, many of the management, banking, fiscal and tax reforms that were initiated in the Special Economic Zones have been imported into the domestic economy. In April, 1984, the government granted 14 coastal cities many of the same incentives for foreign investment that had been tried out in the special zones. Since the 14 cities were designed principally as bases for import substitution, foreign firms located there will also have access to the domestic market for a negotiated portion of their production, much along the lines initially developed in Shenzhen.

The large-scale pricing reforms scheduled for the economy in 1985-86 have already been experimented with in Shenzhen, as have the market regulatory mechanisms for allocating certain raw materials and energy supplies. Reforms affecting enterprises announced in October, 1984, have already been extensively implemented in Shenzhen, and some of the national ministries responsible for large state enterprises have already used co-operative agreements with the special zones to test the limits of these reforms. Future changes may thus be foreseen by looking at the special zones. Thus, for example, monetary reform, involving the creation of a special currency, has been discussed for the Shenzhen zone, a move that might herald changes in the overall convertibility of the Chinese currency. Similarly, foreign banks have been granted permission to commercialize certain activities of their representative offices in the special zones, something that may soon be allowed elsewhere in China.

The average income of workers in the Shenzhen zone is now more than twice the national average, providing an argument for the Chinese leaders that "one country, two systems" works, at least within prescribed limits, and that the direction China has chosen for reform of the economic system is a viable means of opening the country in a limited way to the international economy.

As it is probable that the entire nation will not internationalise its economy quickly, the special zones – and from now on, the 14 coastal cities – may well be the first step in China's future entry into the world economy. If these already relatively advanced areas of China are able to follow the example of other economies in the Asian region – South Korea, Taiwan, and Japan itself are formidable models of rapid industrial economic development in the area – China could prove to be a mighty force in the world economy. The country has the raw materials, the human resources and the domestic market for such a role. In addition, China will be seeking foreign technology and investment. Although interdependent growth will entail challenges for market shares in an enlarged global economy, it will also bring benefit to the entire Pacific region and beyond.

Direct Tax Burdens: An International Comparison

by Jeffrey Owens[1]

How much money is left in the taxpayer's pocket after the payment of income taxes and social security contributions and the receipt of family benefits? How do different countries compare in this respect, and what has happened to these taxes and benefits over the last five years? These are some of the issues discussed in a new publication of OECD's Committee on Fiscal Affairs[2].

There are two ways of comparing the burden of personal income taxes and employees' social security contributions, the two main compulsory levies on earnings in OECD countries. First, the total receipts from these taxes can be expressed as a percentage of Gross Domestic Product (GDP). These are the comparisons presented in Table I which show that personal income taxes vary from four per cent in Greece to 24 per cent in Denmark whereas employees' social security contributions vary from none at all in Australia, Finland, New Zealand and Sweden to nine per cent in the Netherlands. However aggregate tax comparisons mean little to a typical taxpayer. Therefore an alternative approach is used in what follows.

This second approach compares the tax bill of a *representative taxpayer* and also takes into account the family benefits he receives. The representative taxpayer chosen is the so-called average production worker, that is an adult working full-time in the manufacturing sector and receiving the average gross earnings for that group in his country. The inset shows how the earnings and taxes have been calculated and the main limitations on the results.

Personal Income Taxation

The method of calculating income tax payments is similar in all countries and is described in some detail in the report. First, the tax allowances applicable to a taxpayer are deducted from gross earnings, the schedule rate of tax is then applied and the resulting tax liability reduced by any relevant tax credits.

Table 2 shows the average rate of income tax applicable to a married taxpayer with two children at the income level of a production worker. In 1983, this rate ranged from over 30 per cent in Denmark and Sweden to less than one per cent in France. During the years covered by the table, average tax rates of the production worker increased in half of the countries for which data are available, though in percentage terms the increase was relatively large only in Belgium, Ireland, Italy, Japan, New Zealand, Portugal, Spain and the United States. These increases are mainly due to the effect of real and inflationary fiscal

1. *OECD's Fiscal Affairs Division*
2. *The Tax/Benefit Position of Production Workers, OECD, published recently.*

1. TAX REVENUES AS A PERCENTAGE OF GDP
at market prices

	Total tax revenue		*Personal income taxes*		*Employees' social security contributions*	
	1979	*1983*	*1979*	*1983*	*1979*	*1983*
Australia[1]	29	31	13	14	0	0
Austria	41	41	9	9	5	6
Belgium[1]	46	47	16	17	4	5
Canada	31	35	11	12	1	2
Denmark	44	46	23	24	0.4	1
Finland	35	36	15	16	0	0
France	41	44	5	6	4	5
Germany	37	37	11	11	6	6
Greece[1]	28	32	3	4	n.a.	4
Ireland	33	41	10	12	2	2
Italy[1]	30	40	7	10	2	3
Japan[1]	25	27	6	7	3	3
Luxembourg	40	40	11	11	4	4
Netherlands	45	47	12	10	7	9
New Zealand[1]	31	34	18	20	0	0
Norway	46	46	14	12	2	3
Portugal[1,2]	26	31	n.a.	n.a.	3	3
Spain[1]	23	25	4	5	2	3
Sweden	50	51	21	20	0	0
Switzerland[1]	31	31	11	11	3	3
Turkey	21	24	9	11	0.5	0.4
United Kingdom	33	38	10	11	2	3
United States[1]	30	30	11	12	3	3

1. *Last available year 1982.*
2. *Although there is a tax on personal income in Portugal, it is not possible to identify separately the yield from that tax.*

Source: *Revenue Statistics of OECD Member Countries 1965-83, OECD.*

2. PERSONAL INCOME TAX OF AVERAGE PRODUCTION WORKER[1]
(Family with two children)
As % of gross earnings

	1979	*1981*	*1981 Including the effects of expense – related tax reliefs*	*1983*
Australia	16.8	17.9	16.7	16.3
Austria	6.4	7.6	6.9	6.6
Belgium	8.0	11.7	n.a.	12.5
Canada	9.7	10.6	9.4	8.8
Denmark	30.3	32.6	19.6	33.8
Finland	22.9	23.7	20.8	23.8
France	0.4	0.5	0.1	0.4
Germany	9.9	9.7	n.a.	10.5
Ireland	11.5	13.0	11.6	14.0
Italy	9.2	10.9	9.6	11.2
Japan	1.8	2.8	n.a.	3.3
Luxembourg	3.4	3.1	0	2.7
Netherlands	12.5	11.1	n.a.	9.6
New Zealand	16.9	21.5	18.7	21.6
Norway	17.5	17.0	n.a.	15.6
Portugal	4.0	4.0	n.a.	6.0
Spain	6.9	7.3	3.0	8.5
Sweden	33.7	33.7	25.1	33.4
Switzerland	6.3	7.2	6.8	6.1
Turkey	41.8	34.4	n.a.	n.a.
United Kingdom	18.9	19.5	15.0	18.1
United States	11.6	14.4	13.7	15.2

1. Most of the figures shown in this table do not take into account the effects of expense-related reliefs, which are found in all countries' income tax systems. However, the figures in colour for "1981" show, for those countries where the data are available, the average tax rates if these reliefs are taken into account. The expense-related tax reliefs are those typically received by taxpayers having the income level of an average production worker. The value of each relief is calculated by dividing the total amount of the relief received by the total number of such taxpayers, including both those production workers who receive the relief and those who do not. The amounts of all the separate reliefs are then added up to arrive at the total relief received by the average production worker.

drag – the process by which the interaction between progressive tax structures and increasing incomes produces a more than proportional increase in tax payments. In Luxembourg, the Netherlands and Norway, average tax rates fell substantially.

Country comparisons are affected by which tax reliefs are taken into account. In all income tax systems, two main types of tax relief are available to taxpayers. First are the *standard reliefs.* These are not related to actual expenses incurred by the taxpayer and are usually fixed amounts which include, for example, the basic relief available to all wage-earners, relief for marital status and dependent children. The second category refers to those which are determined by the actual expense incurred and include the deductibility of interest on house-purchase loans, relief for life-insurance premiums or for charitable donations. (These are referred to as *expense-related reliefs.)*

The average tax rates shown in Table 2 take into account standard tax reliefs only and neglect expense-related reliefs (except for the colour column for 1981) because in many countries such provisions do not significantly affect the average rate of tax at the income level of a production worker. Moreover, very few countries can calculate the effect of these reliefs for the years following 1981 or in a way that is consistent with the underlying assumptions of these comparisons. (See inset.)

Nevertheless, the colour column for 1981 suggests that certain countries (Denmark, Luxembourg, Spain and Sweden) make widespread use of expense-related tax reliefs since their inclusion reduces the average rate of tax by more than 25 per cent. At the other extreme, inclusion has very little effect – at least for this type of taxpayer and at this income level – on tax rates in Australia, Austria, Canada, Italy, Switzerland and the United States.) Clearly, expense-related reliefs should be taken into account when comparing

income tax rates in the first group of countries with those of the others.

Social Security Contributions and Take-home Pay

With the exception of Australia and New Zealand[3], all OECD countries use employee and employer social security contributions to finance social benefits. For the most part, the employee's share is

THE METHODOLOGY

The unit of comparison: *A production worker in the manufacturing sector, who is assumed to be fully employed during the entire year.*

The earnings calculation: *Gross earnings refer to annual average earnings of male and female production workers, including normal overtime and bonuses but excluding fringe benefits (i.e. free meals, employer pension contributions).*

The personal characteristics of the taxpayer: *The data refer to single people and married couples with two children in which only the husband has a paid job and the children are between 5 and 12 years of age. In this article, the data for single persons are omitted.*

The taxes and benefits covered: *Personal income taxes – central, state and local – compulsory social-security contributions and universal family cash transfers, are covered. In Belgium, Canada, Denmark, Finland, Japan, Norway and Sweden – all countries having state and/or local income taxes – the figures used refer to a country-wide average rate of income*

levied on gross earnings without taking into account his or her family situation. Separate contributions are generally required for each category of social security scheme (for example, pensions and unemployment), and in most cases there is a ceiling on the earnings base.

If employees' social security contributions and income taxes are deducted from the gross earnings of the average production worker, take-home pay, as shown in Chart A, is equal to more than 90 per cent of earnings in Japan but to just under 60 per cent in Turkey, most countries being in the 75 to 85 per cent range. Over the period covered, the relatively significant reduction in take-home pay shown in Chart A is largely explained by higher social security contributions for France, Ireland and the Netherlands and by higher income taxes for Belgium, Denmark, New Zealand and the United States.

tax. The Swiss figures for state and local taxes refer to Zurich while figures for the United States refer to Detroit, Michigan.

SOME LIMITATIONS

Nothing is said about the worker's ranking in the distribution of income. *Even if a production worker does similar work in different countries, he is unlikely to fall within the same relative income group.*

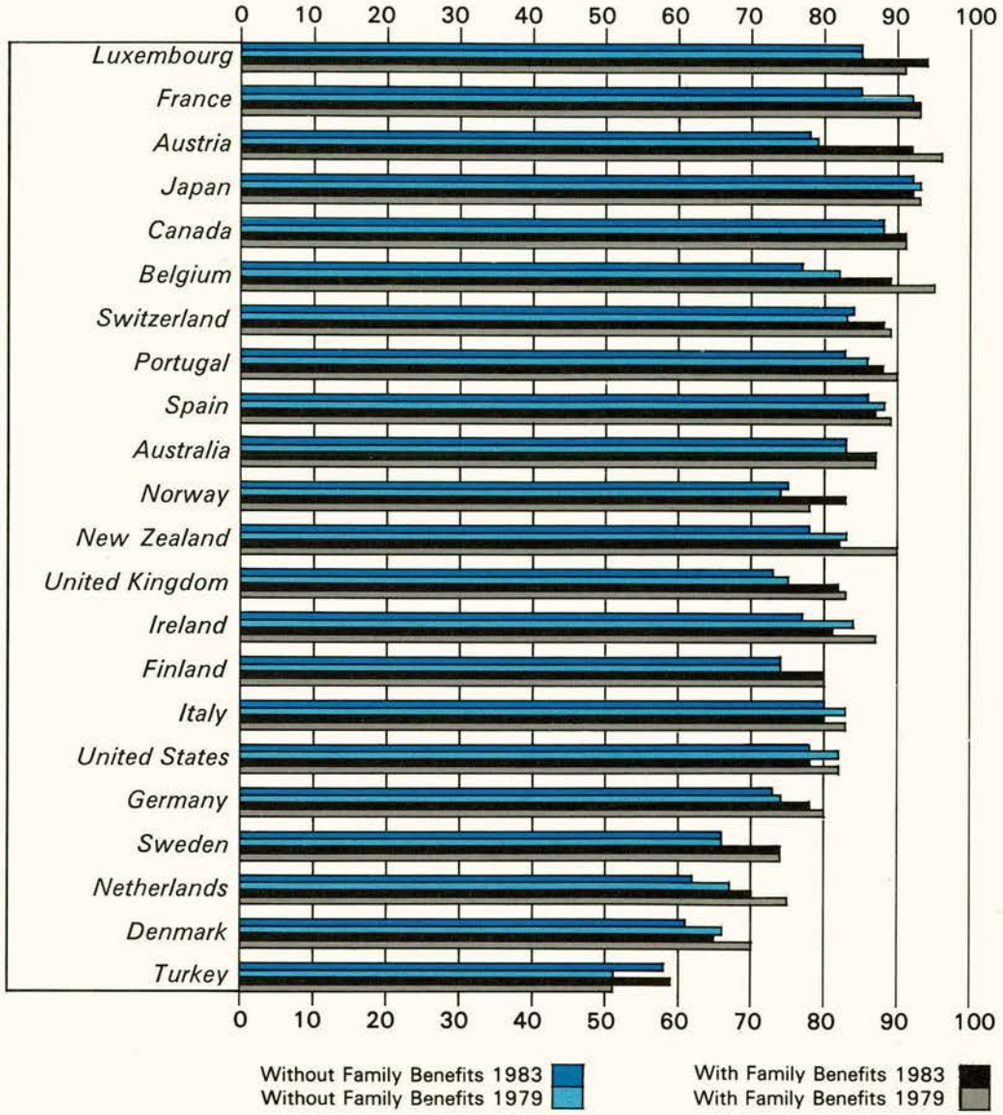
Only a partial picture is presented. *Because only a part of the tax/benefit system is examined, the results do not show the overall impact of government spending and taxing on the welfare of taxpayers.*

It is not the same taxpayer who is being compared over time. *In each year the representative worker is chosen by reference to average manufacturing wages; therefore the same individuals are not necessarily being followed through time.*

The results are applicable only under the specific assumptions referred to above.

TAKE-HOME PAY WITH AND WITHOUT FAMILY BENEFITS

As percentage of gross earnings[1]
(One-earner family)



1. The first two bars refer to take-home pay (earnings minus income tax and employee social security contributions) but do not include family benefits. The third and fourth bar do. Countries are ranked by 1983 figures for the latter, except for Turkey (1981). Calculation of the income-tax payments takes account of standard tax reliefs only and not of expense-related reliefs.

Family Benefits and Take-home Pay

When family benefits are added to take-home pay (which seems appropriate since they are an alternative to tax allowances for children and increase the net income left at the disposal of families), the variation in country positions is somewhat increased. Chart A shows that, in 1983, take-home pay plus family benefits represented between 59 and 94 per cent of original earnings. Denmark, Finland, Germany, Italy, the Netherlands, Sweden, Turkey and the United States leave households with 80 per cent or less of their original earnings, though in Denmark and Sweden the widespread use of expense-related reliefs substantially increases these percentages. At the other extreme are Austria, Canada, France, Japan and Luxembourg where the worker is left with more than 90 per cent of gross earnings. Between 1979 and 1983, the percentage of earnings left to the worker's household fell in most countries.

3. Social benefits in these two countries are financed out of general revenues.

Country Problems and Strategies

Norway

Norway's economic performance over the past decade has been good by international standards, with growth averaging 4 per cent a year, and the rate of unemployment one of the lowest in the OECD area. Inflation has come down from the double digit figures recorded in 1981, although it remains above the OECD average. The balance of payments is in surplus, and there are no problems as regards public finance, thanks to the large and growing oil revenues.

On the other hand, there has been a progressive deterioration in the viability of the non-oil sector and in the ability of the Norwegian economy to cope with the structural adjustment pressures which have emanated from the international economy over the past decade. The weakness of the supply side of the economy has been reflected in a number of specific problems:

- In the past decade, increases in nominal demand have been associated with higher rates of inflation and lower rates of real output growth than before.
- The profitability and financial structure of the exposed sector have been undermined by rising real labour costs in relation to Norway's main trading partners.
- Industrial production has been virtually stagnant for the last 10 years, with a large proportion of industrial employment in low growth sectors.
- Massive subsidies to industry have locked resources into non-productive uses and resulted in an over-capital-intensive industrial structure.

These problems emerged when Norway found large oil reserves. It has been a net energy exporter since 1974, and traditional sectors of the economy have become highly dependent on the oil and gas revenue over the past decade. Oil and gas now account for over 18 per cent of GNP, 20 per cent of gross capital formation, about one-third of total export earnings and about 15 per cent of net national income. High income expectations were translated into a uniformly high wage increase across industries irrespective of differences in productivity gains. The elimination of the external constraint led the government to adopt excessively expansionary demand-management policies in the 1970s. The result was high inflation and falling competitiveness for sectors exposed to international competition.

In the 1980s, there has been an awareness in Norway that the traditional policy of combining an expansionary macro-economic stance with increasing government subsidies and transfers to the private sector is not the way to manage the economy. Policies have been modified in recent years and re-oriented towards strengthening the supply side of the economy, with a range of measures aimed at increasing competition, encouraging savings and investment and promoting a more efficient allocation of resources.

The severeness of the world recession in 1981/82 and the difficulty in resisting what are perceived as legitimate demands on increased oil revenues have tended to limit the pace of implementing the reorientation of policy. Nonetheless, the new policy approach entailed some success in restraining public expenditure growth, easing the average tax burden, pricing public services in line with their true costs, increasing competition between public and private sector enterprises, deregulating financial markets, introducing an industrial policy based not on direct support but on creating a climate conducive to increased efficiency and innovation, and breaking down rigidities in the labour market and devoting more resources to training and retraining the unemployed. Despite these efforts, a high level and complexity of support for business have tended to maintain the *status quo* and impede structural adjustments in the economy.

Government assistance to business includes selective grants to industries in difficulty, tax relief, loan guarantees, injections of equity capital and low-interest credit. Also, as in other OECD countries, certain sectors are protected from international competition through import bans and quota arrangements, as well as through limitations on the free entry of foreign firms. Norwegian suppliers are also given preferential treatment when it comes to the award of contracts in the government-regulated oil sector. The value of government support to business, measured in constant prices, tripled between 1973 and 1983, while government consumption increased 66 per cent and GDP grew almost 50 per cent. As a proportion of GDP, support doubled to 6 per cent by 1981. It has since remained roughly at that level with a slight decline in 1983. The primary sectors accounted for two thirds of total support; subsidisation is particularly significant in agriculture, where it represented nearly 85 per cent of factor income in this sector in 1983, while imports of products that can technically be produced in Norway are almost entirely forbidden.

As well as limiting foreign penetration of the Norwegian market, the government also had a policy of acquiring private firms on the verge of bankruptcy in the 1970s. The most important companies absorbed into the public sector were Tandberg (electronics), Store Norske Kull Kompani (coal), Tofte (pulp) and Tyssedal (aluminium). In retrospect it appears that these acquisitions were often made at prices well above market values incurring heavy losses for the government. Today, state firms and shipbuilding are the main recipients of government support.

Norwegian policy of business support has not been implemented in accordance with some of the recommendations for positive adjustment. The first of these is transparency. An overall and consistent concept of the government's support policy was not presented. Measures were often based on partial analysis of the problem and all became permanent even if they were initially announced as temporary. More recently, however, transparency has improved, with detailed information being given in the state budget and comparisons being made of subsidies per employee in different industries.

It is also important that conditions be attached to the granting of support to industry, if a positive adjustment impact is to be obtained. In many cases in Norway, support has been extended with few or no conditions attached, so that it has been treated by recipients as a source of rent. Budgeting procedures have not been sufficiently rigorous to prevent the proliferation of support schemes or to enable the costs and benefits to producers, consumers, taxpayers and society in general to be evaluated. In 1982, for instance, about half of industrial assistance and three quarters of all business support was decided outside the ordinary budget process. Since then, though, steps have been taken to tighten up the system. All guarantee schemes are now treated as part of the budget process, and yearly ceilings are

established; appropriations for additional expenditures during the fiscal year are now considered together and presented as a whole to Parliament.

Finally, it is questionable whether policy objectives have been achieved at the lowest possible cost. The performance of state firms compares unfavourably with that of private firms on the whole. More selective support might have had a higher employment effect, moreover, or the same number of jobs could have been created at lower cost. At the same time, maximising the employment-creating effect of support measures would have resulted in higher total output.

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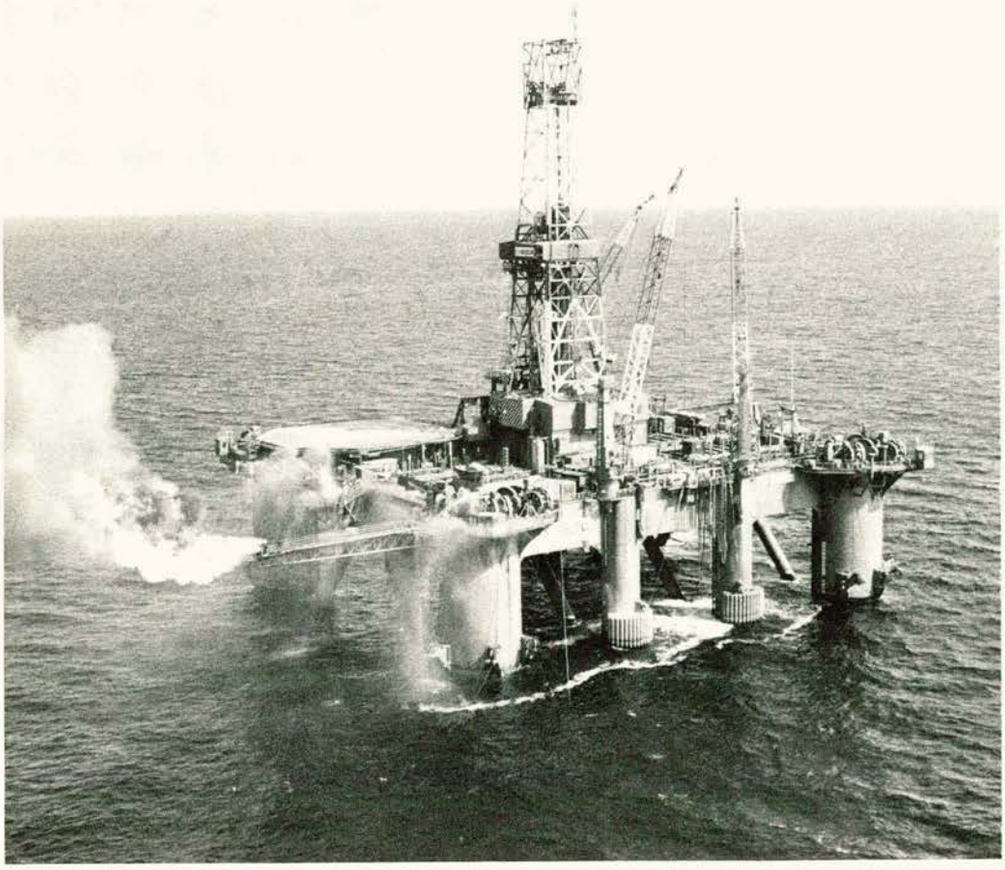
The speed at which the volume of subsidies can be reduced and the existing system reformed will depend on the short-term social and economic costs. Agriculture is a sector where change is most urgently needed; not only should farm incomes be gradually de-indexed and production targets cut back but import restrictions should be reduced. This would lead to substantial economic gains; agriculture is an example of an activity where productive resources that could have been used more productively in almost any other sector have been tied up disproportionately.

The immediate economic outlook is promising, with the export-led upswing now broadening to all sectors of the economy. However, demand-management policy in 1985 seems expansionary; and a heavy burden is being placed on monetary policies to contain inflation. Success in the latter would require interest rates to be more flexible. Moreover, although the expansionary stance has been adopted partly to reduce unemployment, this is probably largely due to other factors than a lack of aggregate demand.

At a general level, a detailed review of public finance seems warranted. Taxes are already among the highest in the OECD area, despite the oil bonanza, and uncertainties over the future price of oil makes this source of revenue inherently unstable. With transfers to the private sector now accounting for over 60 per cent of government outlays, it might be difficult to cut expenditure easily and quickly if there were a sudden shortfall in revenue due to factors outside the government's control. With government financing that vulnerable to external shocks, the authorities cannot rely on fiscal policy to honour their commitment to maintaining high employment. Policy needs to give greater emphasis to adjusting production costs and structures in response to changing market conditions.

The Norwegian Government has begun encouraging exploratory drilling north of the 62nd parallel.



The United Kingdom

It is nearly six years since the present British government was first elected to office and introduced its new economic strategy. Described recently by the Chancellor of the Exchequer himself as an experiment, the policy consists of two elements: a context of monetary and fiscal discipline based on the so-called Medium-Term Financial Strategy and a concerted attempt to dismantle many of the rigidities that have stifled the British economy for decades so as to enable capital, commodity and labour markets to operate with greater freedom and efficiency. After some initial difficulties in 1979-80, the strategy has been successful in reducing inflation and the public sector borrowing requirement. But the rate of growth of wages has remained high relative to the growth of prices, and unemployment has continued to climb. These factors are related and reflect certain rigidities in the labour market. This is one reason why measures have also been taken to improve the supply side of the economy. The problems there are rather deep-seated, and the progress made is thus harder to assess.

Numerous studies have attempted to identify the causes of the United Kingdom's weak industrial performance during the 20th century. No single explanation has been produced for British productivity and investment to have lagged behind those of its principal competitors. Among the factors that have been cited are the industrial relations problems prevalent in large manufacturing plants, the low quality and quantity of vocational and other training, impediments to the supply of capital and its utilisation and differences in plant size and concentration. In recent years there does appear to have been some improvement in performance, with a sudden spurt in productivity growth: output per head rose by 3 per cent annually from 1980 to 1983 (5 per cent in manufacturing alone). But these gains were initially due not so much to a rapid rise in output as to a labour shakeout with a resulting sharp rise in unemployment. Employment did not start to recover until 1983, but with the labour force growing quite rapidly as economic conditions improved and with productivity growth remaining strong, unemployment continued to increase.

Low investment (as a proportion of GDP) is often said to be the root of the U.K.'s poor productivity record, but closer analysis suggests that it is not the quantity of investment which is lacking but the quality. That capital investment is inefficient in the U.K. is illustrated by the fact that the

United States invests less per unit of output in manufacturing industry than the United Kingdom, yet its output per employee is three times greater. Other figures point to the same conclusion, indicating that a higher rate of net investment is required to generate additional output in the U.K. than in the U.S. or Germany. Moreover, the rate of return on fixed capital, although picking up recently has long been significantly lower in the U.K. than in the other major industrial countries.

In an attempt to improve the efficiency of investment, the government introduced radical changes in the system of corporate taxation in the 1984 budget, aimed at creating conditions for investment which no longer discriminated between capital and labour, between different kinds of investment or between different forms of financing. Accelerated depreciation allowances which meant that certain projects with a poor pre-tax rate of return looked rather profitable in after-tax terms, are being phased out over two years. Although the phasing out may have the effect of bringing forward some investment during that period, from 1986 onwards the system should discourage less efficient types of investment while encouraging enterprise through a lower overall rate of profits tax.

In a bid to improve the workings of the financial markets and instill a more competitive environment, the Government proceeded to abolish all sorts of controls soon after it took office. These included controls on pay, prices and dividends, foreign exchange transactions, bank lending and, at a later stage, hire purchase. Traditional rules and regulations governing and demarcating the operation of financial institutions have been relaxed, resulting in greater competition in the provision of financial services. Legislation on monopolies, mergers and restrictive practices has also been strengthened, while enterprise has been encouraged with the introduction of a number of schemes designed to promote and assist the establishment of small businesses.

Another prominent plank of the Government's strategy is privatisation – the sale of publicly-held assets to the private sector. The hope has been that returning companies, and even entire industries, to the private sector will improve their economic performance by exposing the business to more open competition and will induce a change of attitude on the part of management and labour. It was thought that bringing what were often state monopolies into the private sector would make them more responsive to market forces. But the key question is whether a monopoly position in the public sector can be transformed into a competitive position in the private sector. The change of ownership itself may not be enough since a private sector monopoly, free from government control, could turn out to be worse, or no better, than a public sector one.

The privatisation programme started in 1979, and in the following years companies like Britoil, Cable and Wireless, British Aerospace and the National Freight Corporation were all successfully floated. But the most ambitious sale took place last year, when British Telecom passed into the private sector. The privatisation of British Telecom was accompanied by measures to curtail its monopoly and by the establishment of a government agency to ensure fair competition and reasonable prices in the telecommunications industry. There remains a long list of government-owned companies that are scheduled to be privatised in the next two or three years, starting with British Airways during 1985, and then British Shipbuilders' warship yards, the Royal Ordnance Factory, the National Bus Company, Rolls-Royce, Short Brothers, parts of British Steel and British Leyland, and as many airports as possible. But even if this programme of asset sales is completed as planned, that would still mean that only about a tenth of the assets of the nationalised sector had been sold off.

The London Stock Exchange, December 2, 1984, the day that British Telecom was privatised.

Labour market rigidities have been another target of the government, which considers them a prime cause of unemployment to the extent that real wages have not adjusted to the weakness of employment conditions. Between 1979 and 1984, real wages rose by 8 per cent, roughly the amount by which productivity increased, but the number of people in employment fell by 8 per cent, and the rate of unemployment rose from 5 to 12 per cent. The increase in real wages (of those still in work) has been due in part to defensive union reactions and has been at the expense of those without a job or joining the dole queues. Legislation has been introduced to change the legal context of industrial relations, removing some of the trade unions' legal immunities and strengthening the position of individual workers in relation to union leadership. But while the power of the unions has been reduced, resulting in a more ready acceptance of changes in working practices, there has been no sign of any greater downward flexibility in real wages.

Another problem is the lack of labour mobility, due principally to the non-transferability of occupational pensions and inflexibilities in the housing market. The government has moved to tackle these problems, but it is too early to say with what success. Similarly, it has taken steps to improve the quality of education and training, but that can only be expected to have an impact in the longer term.

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The current recovery in the British economy began in 1981, some two years ahead of the rest of the OECD. Since 1983, those other countries have themselves been growing more strongly, thus boosting British exports. But there are two other reasons for thinking that the recovery will prove more sustainable than past upturns. It was not generated by an expansionary fiscal policy nor has it been as dependent as in the past on the contribution of stockbuilding. However, even before the recent jump, real interest rates were higher than at a similar stage in previous cycles. Inflation has been cut from around 20 per cent in 1979-80 to around 5 per cent, but care still has to be taken to prevent inflationary

pressures from building up as the recovery continues.

The miners' strike has had an adverse effect on both output and demand, reducing the level of GDP in 1984 by about 1 per cent. It has also caused a fall in the surplus on the U.K.'s oil trade, as exports declined and imports of crude oil soared, not to mention an overshoot in the public sector borrowing requirement in 1984/85 which may amount to between 1 and 2 billion pounds. But the strike has not thrown the economy off course, and the recovery is continuing.

Unemployment remains the major headache, although the deterioration in British industry's trading performance, giving the country a negative balance on its trade in manufactures for the first time in its history, is also a cause for concern – the growth in imports of goods and services in 1981-84 was equivalent to nearly half the rise in total domestic demand, resulting in a sharp increase in import penetration in many sectors. While the high level of unemployment partly reflects the effort made by manufacturing industry to cut costs and improve productivity, British industry's competitiveness still remains problematic. Improvements in that area, to which the supply side measures are in part directed, will enhance employment prospects over the longer term. Meanwhile, given the scale of the unemployment problem, it would be sensible to look for other ways to try to promote employment.

Any radical relaxation of the Medium-term Financial Strategy would risk undermining confidence in the policy approach adopted so far and might, therefore, be counterproductive. Moreover, inflationary pressures might re-emerge, either directly through higher wage settlements or more indirectly through a decline in the exchange rate. Nevertheless, there may be some scope for tax reductions or increases in public expenditure within the bounds of the strategy, as is suggested by the "fiscal adjustment". Consideration might be given to the employment effects of different fiscal measures in choosing how to use the fiscal adjustment, as well as to their more general impact on the supply side. Investment in infrastructure, provided that it yields an adequate social rate of return, might be favoured since it has a fairly high employment content and would be adding to effective supply. Consideration might also be given to reductions in taxes or National Insurance contributions which would improve incentives and also tend to reduce the growth of labour costs. It is important that such measures should be assessed not only on their output and employment effects but also on their contribution to the supply-side performance of the economy.

Source: OECD

Cars Improve Fuel Performance – But Bigger Models Popular Again

OECD's International Energy Agency (IEA) reports "distinct improvement" in fuel efficiency of passenger cars in Member countries over a 10-year period.

Average annual gasoline consumption per passenger car in the 21 IEA countries fell by 21.5 per cent to 2,251 litres between 1973 and 1983, through a combination of improved performance, a trend towards smaller cars and changes in motoring habits.

In the 10 years up to 1983, gasoline consumption in IEA countries increased by only 7.8 per cent, despite a 37.3 per cent increase in the number of vehicles. Consumption reached a peak of 645 billion litres in 1978 and fell slowly to 585 billion litres in 1982, despite a growth in car numbers. However the figure grew by 10 billion litres in 1983, a reversal of the trend.

IEA has expressed concern that the current easier oil market situation would reduce consumer interest in fuel efficiency and called for continued efforts in this direction. Although today's bigger cars are more fuel-efficient than equivalent models five years ago, some targets set for 1985 are in danger of being missed.

Source: Fuel Efficiency of Passenger Cars, *OECD, 1985.*

Export Credits: Lower Interest Rates

Minimum interest rates for officially supported export credits stipulated in the matrix of the Arrangement on Export Credits were adjusted downwards on 15th January, 1985. The new matrix of minimum interest rates is as follows:

Classification of Country	*Number of Years in Maximum Repayment Terms (%)*		
	Over 2 to 5	*Over 5 to 8.5*	*Over 8.5 to 10*
Relatively rich	12.00	12.25	not applicable
Intermediate	10.70	11.20	not applicable
Relatively poor	9.85	9.85	9.85

The rates are adjusted according to the automatic mechanism (including complementary adjustments) instituted by the Participants to the Arrangement on 15th October 1983. The rates are subject to change every six months, the present adjustment is the second, minimum rates having moved upward on 15th July 1984. The new change brings minimum rates to 15 basis points below the levels which were in force before 15th October 1983.

Expectations for the Steel Market in 1985

Total OECD crude steel production, after increasing by 2 per cent in 1983, showed a more significant growth in 1984. It rose by 9.3 per cent to about 368 million tonnes. However, these increases in the last two years represent only a partial recovery from the sharp decline in steel production in 1980-82.

It is not an increase in steel exports that is responsible for the increase in OECD steel production. On the contrary, declining exports to some of the non-OECD areas and increasing imports, particularly by Japan and the United States, from a number of developing countries in Asia and Latin America caused net exports of steel mill products from the OECD area to fall by an estimated 5 million tonnes to what was probably its lowest level since 1973.

The main reason for the increase in production was a rise in the OECD's total apparent steel consumption by an estimated 13 per cent. However consumption was still 10 per cent or 40 million tonnes (ingot equivalent) below the 1979 level. The strong 1984 increase was due not only

to growth in economic activity – and in particular in investments– but also to a sharp reversal during 1983-84 in the movement of steel inventories held by producers, merchants and consumers of steel. In 1983 these inventories generally declined while in 1984 they increased. Thus in 1984 the *actual use* of steel was less than indicated by the figure for apparent steel consumption.

The increase in 1984 does not necessarily, therefore, imply a reversal of the post-1973 downward trend in OECD steel consumption. This trend, in contrast to the continuing growth in OECD total economic activity, is due to several factors: the changing structure of economic activity from material-consuming "hardware" to increasingly knowledge-intensive "software", more efficiency in the use of steel, and the replacement of steel by other materials. Altogether these factors have caused steel "intensity" (the consumption of steel per unit of GNP) in the OECD area to fall by 3.7 per cent per year on average since 1973.

It is hardly surprising, therefore, that in 1985, with some slowdown in general economic growth, OECD apparent steel consumption seems likely to diminish again. Based on expectations of governments represented in the OECD Steel Committee, the reduction may well be in the region of 2 per cent.

For the OECD steel industry as a whole, the prospects for trade with non-OECD areas are not very encouraging. Since the mid-1970s, its share in both the OECD market and the rest of the World has tended to decrease. These tendencies are likely to continue, at least in the immediate future, because steelmaking capacity in developing countries currently appears to be increasing faster than the increase in domestic demand.

Taking all indications together, it seems probable that OECD crude steel production in 1985 will differ little from that in 1984. A small downturn seems more likely, however, than a further increase.

Employment in the OECD steel industry continues to fall. In 1984, despite the increase in production, there were further reductions in the labour force – by 7 per cent in the EEC and 2 per cent in the United States. In 1985, a further shrinkage is probable, with resultant increases in unemployment among steel workers.

However, if the vigorous restructuring efforts which in recent years have reduced capacity substantially are continued, the prospect of a smaller, but more fully utilised and therefore more viable industry comes nearer.

Source: *OECD Steel Committee.*

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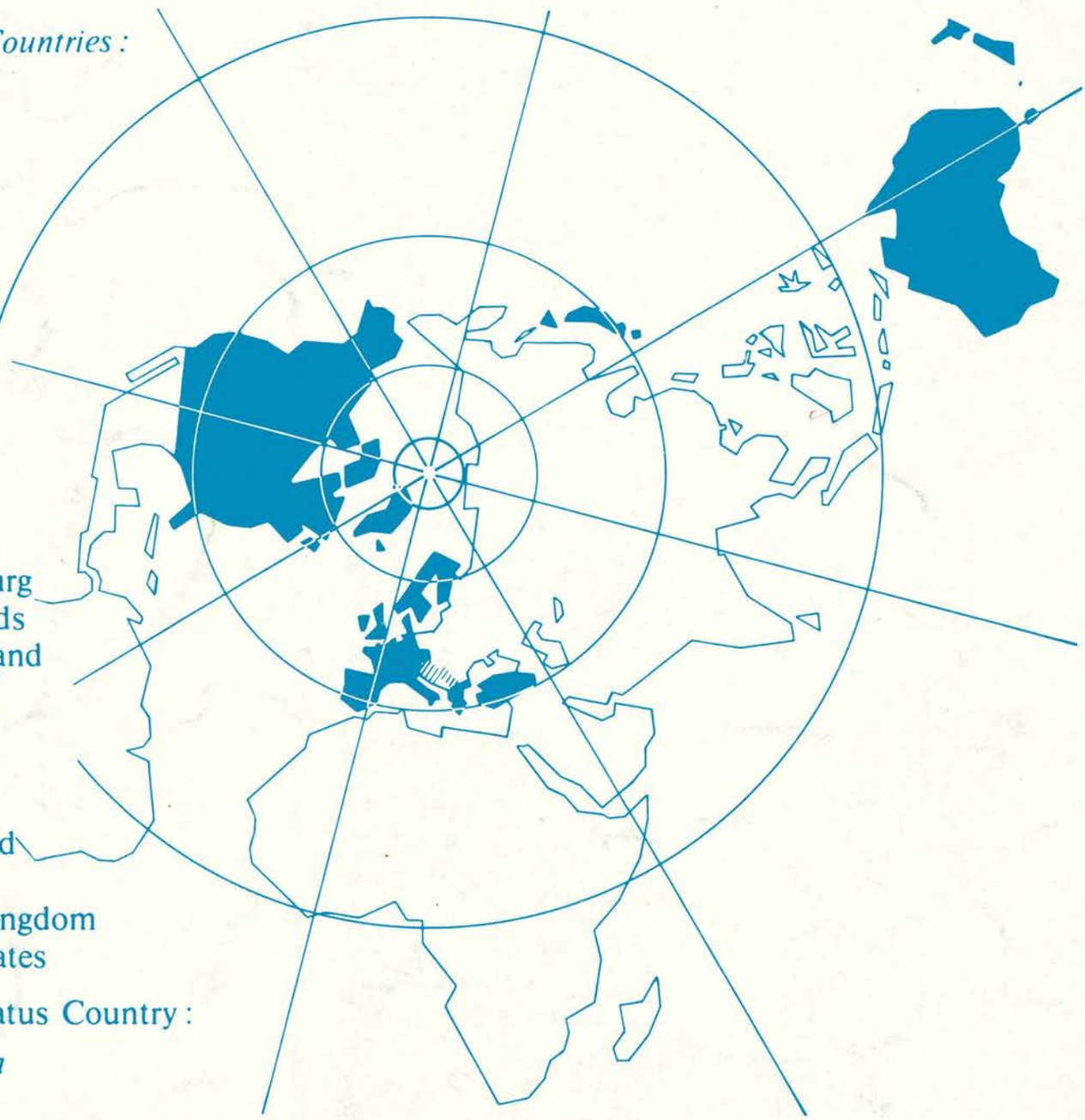

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