

EUROPEAN STUDIES

Teachers' series

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Bretton Woods and After (1)

by Ian Davidson

The international monetary negotiations concluded at Bretton Woods, in New Hampshire, in July 1944, represented the first ever attempt to set universal rules for the management of payments, credit and exchange rates. These rules were a major step forward from the chaos of the pre-war years, and made possible a period of unprecedented economic prosperity and stability. Their shortcomings—the failure to deal adequately with chronic surpluses and deficits—lay behind the international monetary crises of the late 1960's.

Perhaps the most important legacy of the Second World War was the establishment of a series of international institutions based on the principle of economic liberalism and law. Liberalism, because the United States and Britain (who were preparing actively for the post-war period even while hostilities were going on) were historically attached to the ideas of freedom of trade and payments; law, because the absence of commonly-agreed rules and institutions had exacerbated the international repercussions of the pre-war slump, in which every country had taken desperate, independent and mutually destructive measures to protect its own economy. The British and American governments were determined to avert the repetition of an international economic chaos which had contributed, in large part, to the rise of Nazism in Germany. John Maynard Keynes, who led the British negotiating team, had shown that it was possible to reverse economic downturns by government spending, and the British government was anxious that the post-war international monetary system should be designed to help maintain full employment; in other words, governments must no longer be forced to deflate whenever their balance of payments ran into deficit with the rest of the world.

The International Monetary Fund, whose charter was negotiated at Bretton Woods and which was to be the keystone of the post-war international monetary system, made two quite different kinds of provision for maintaining full employment and freedom of trade and payments. In the first place, it established a new set of rules for exchange rates, and in the second it set up a new system of international credit.

Before the First World War, the world operated on what may loosely be described as the gold standard: most major currencies were backed by gold or consisted, at least in part, of gold coins; and gold was internationally acceptable as a medium of exchange; exchange rates therefore tended to be fixed in terms of gold. The gold standard broke down, however, between the two world wars, largely because the available supply of gold failed to grow as fast as international trade and payments, and the volume of international transactions had to be supported on an increasingly narrow and precarious gold base.

In modern parlance, the world was going through a liquidity crisis. In order to protect themselves against the shortcomings of the gold standard, countries resorted to a whole series of measures—such as import quotas, exchange controls and domestic deflation—which appeared to preserve international monetary stability, but only at the cost of restrictions on trade and economic growth. But by the Second World War it was clear that the orthodox gold standard was dead, however much traditional central bankers may have regretted the fact, and some new system of exchange rates had to be found.

At the centre of any stable system of exchange rates there must be some universally accepted standard of value and universally acceptable store of value. General de Gaulle continued to believe, even in the late 1960's, that this role could only be fulfilled by gold "which does not change in nature, which can be made into either bars, ingots or coins, which has no nationality, which is considered in all places and at all times the immutable

and fiduciary value *par excellence*". No responsible authority shared his view or would have wished to turn the clock back fifty years, if only because they could see no reason to put the international payments system in thrall to the arbitrary distribution of gold deposits in South Africa and the Soviet Union; in the post-war period, governments started believing that they could control their economies more effectively.

In 1944, the obvious alternative to gold as the centre of the international monetary system, was the American dollar. The economy of virtually every other industrialised country had been shattered by the war, and the imports that they all needed for reconstruction could only come from the United States. The dollar was therefore the only currency which was universally acceptable, since it alone could be used to purchase the goods that everybody wanted, and it seemed natural to make it the standard of value in the new international monetary system.

The currency of virtually every other non-Communist country was therefore expressed in dollars, and the exchange rate registered with the International Monetary Fund (or, as it is sometimes called, its *par value*) was maintained by the relevant central bank buying or selling dollars in the foreign exchange market. A certain amount of latitude was allowed, with a margin of up to 1 per cent above and below the central exchange rate. But if the pound, for example, were to fall 1 per cent below its par value in the foreign exchange market, the Bank of England would be obliged to buy pounds; whereas if it rose 1 per cent above the parity, the Bank would be obliged to sell pounds; in each case to keep the pound at, or very close to, its official exchange rate. In practice, the major European central banks tended to support their currencies even closer to their par values than this, within a margin of 3/4 of 1 per cent.

The United States was the only country which was not obliged by the rules of the International Monetary Fund to support its currency in the foreign exchange markets in this way, since every other country was supporting its currency against the dollar. (The US was not forbidden to intervene in the foreign exchange markets, however, and 20 years after the war, when the dollar began to be regarded as a weak currency, the American authorities did help to support it in the foreign exchange markets, in collaboration with other central banks.)

Gold was not entirely banished from the new international monetary system, even though its role was much reduced. The obligation of the American authorities was not to buy and sell foreign currencies, but to buy and sell gold at a price of \$35 an ounce, a price fixed by Congress before the war. Thus, though the dollar was at the centre of the system, it was backed by, and convertible into, gold.

The aim of this new international monetary system, known as the gold exchange standard, was to provide a stable framework of relatively fixed exchange rates, which would facilitate the expansion of international trade by giving businessmen a reasonable degree of certainty about the prices at which they would be buying and selling. There was, of course, no way of preventing the prices in one country from getting completely out of line with the general level of prices in the rest of the world, since each government was free

to run its economy as it thought best, with whatever rate of domestic inflation was politically acceptable. But if a country did get out of line in this way, it would cease to be internationally competitive, and its exports would no longer be large enough to pay for its imports. In other words, it would start running chronic balance-of-payments deficits, and if it was judged to be, in the International Monetary Fund jargon, in a state of "Fundamental disequilibrium", it would be entitled, and might even be forced, to change its exchange rate against the dollar. So, Britain devalued the pound from £1 = \$4 to £1 = \$2.80 in 1949, and again down to \$2.40 in 1967; but revalued to approximately \$2.60 in 1971.

In practice, however, the system has been weighted in favour of fixed exchange rates, and this institutional bias has been reinforced by uniformed political prejudices. Governments, and their electorates, have too often regarded the value of their currency as an international virility symbol, and because they have considered devaluation (or in some cases, revaluation) as a national humiliation, they have generally delayed making the appropriate change in their exchange rate for far too long. Since the monetary crises of 1967-1971, even politicians have acquired a more sophisticated outlook, and learned that an exchange rate is simply a price like any other, which need not bear any chauvinistic or emotional overtones.

This exchange-rate system was supplemented, in the charter of the International Monetary Fund, by a new scheme of international credit, in which the Fund played a role similar to that of a bank, taking deposits and making loans. A credit system was required in order to buttress the principle of fixed exchange rates since it is always possible that a country will get into severe but temporary balance-of-payments difficulties which do not imply that it is in a state of fundamental disequilibrium. If it did not have access to emergency finance, it could exhaust its reserves and be forced to devalue, simply because it was no longer able to support its currency against the dollar in the foreign exchange markets.

John Maynard Keynes, and his American opposite number, Harry Dexter White, started out with rather different ideas about the appropriate role of the Fund, but both of them envisaged very radical and ambitious schemes which would have given the Fund not only great independence in the raising and distributing finance but also great authority in supervising the economic policies of the member governments.

Their ideas were too ambitious for the American Congress, and had to be watered down. Yet even so, the IMF represented a major step forward in the rational management of international liquidity. The Fund's financial resources are made up of contributions from each member state, known as its *quota*, with each country's quota being determined initially by a complicated formula made up of the size of its national income, its volume of trade and its gold and foreign-exchange holdings.

One ingenious feature of the scheme was the way the national contributions to the Fund's resources were made up. A quarter of the quota had normally to be paid in gold, but the remaining three quarters was in the form of national currency. This was ingenious because, whereas pounds, for example, are useless to the British

for the purpose of settling their import bills until they are converted into foreign currency, they may well be useful to other countries that wish to import goods from Britain. Thus the quota system multiplies the supply of useable finance available to the Fund by four.

The other ingenious feature of the scheme was the way in which these resources were to be lent by the Fund. Normally a member country can draw foreign exchange from the IMF automatically up to an amount equivalent to its gold subscription (or, as it is technically known, its "gold tranche"). But it does so by "purchasing" the foreign currency with an equivalent amount of its own currency; thus the total value of the Fund's resources is not depleted by the operation, even if some of the currencies it holds are less in demand than others; for obviously the currency of a country which is in deficit and needs to borrow from the Fund will be less in demand with other countries than the currencies of surplus countries.

But a country can go on purchasing foreign currency from the Fund beyond its gold tranche, though the more it borrows, the more its borrowings and its domestic economic policies are examined by the Fund: it obviously makes no sense for it to go on borrowing from the IMF if it is really in a state of fundamental disequilibrium, since in that case it has little or no prospect of being able to repay, and if domestic deflation does not reverse the balance of payments deficit, it would do far better to change its exchange rate by devaluing. (Devaluation means reducing the value of the currency against the dollar and therefore against other currencies; revaluation means raising the value of the currency against the dollar and other currencies.)

The absolute credit limit is reached when the Fund's holding of a borrower's currency amounts to 200 per cent of its quota; since the Fund starts out with 75 per cent of the quota in that currency, this means that the borrower can put in another 125 per cent of its quota in its own currency, i.e., draw foreign currency equivalent to 125 per cent of its quota.

Since the Fund was only intended to provide temporary finance for countries which ran into passing balance of payments difficulties, withdrawals had to be repaid fairly rapidly. First repayments fall due after three years, the repayment has to be completed within five years, and repayment naturally means buying back one's own currency by depositing foreign currency (or gold).

Naturally, there are a great many minor rules and regulations which have not been discussed here, and the implementation of the Fund rules has changed slightly over the years. But there is one subtlety about the Fund's operations which is worth pointing out at this stage, because it has led to serious problems in recent years. The Fund starts life with a fixed quantity of currency from each member state, equivalent to 75 per cent of the member state's quota. But if Britain, for example, draws dollars from the Fund to meet a balance-of-payments deficit, the Fund's dollar holdings are thereby reduced; the United States is thereby considered to be in a creditor position with the Fund and its automatic drawing rights are increased by the amount of Britain's dollar drawing. On the analogy of its original automatic drawing rights, based on its gold tranche, this creditor position is known as its *super-gold tranche*.

In practice, of course, the US is unlikely to want to draw on the Fund if other countries are in deficit since it is, presumably, in surplus. The problem can arise, and has arisen, when other countries wish to repay their drawings. Because of its payments deficits the US in 1971—with its gold holdings, well below the level of other countries' holdings of dollars—decided it would no longer buy dollars for gold. In this situation, a country holding most of its reserves in dollars is in difficulty; if it tries to pay its debt in dollars, it may well provide the Fund with more dollars than it can use, that is, push the dollar holdings above 200 per cent of quota. The problem arose at the beginning of 1972 because the repayment of a series of British drawings coincided with massive payments deficits on the part of the US.¹

In the broadest terms, this is the problem of convertibility, that is, the problem of converting the international glut of dollars into other foreign currencies which are welcome to other countries or acceptable to the Fund. It has not so far been solved, because the dollar, though still a weak currency (i.e., in excessive supply), is still the world's major reserve currency.

But discussions have now started for replacing the dollar by some other international reserve medium, whose supply would not depend on the American balance of payments.

Several other points about the IMF are worth noting. First, it was originally intended to be a world-wide organisation, and the initial negotiations did include the Soviet Union, while a few East European countries even joined the organisation for a short while. But in practice, its membership has been confined to the non-Communist countries, almost all of whom are now members. Switzerland is the only important industrialised country which is not a member, though it does cooperate with the Fund and has lent it financial resources.

Secondly, it is important to remember that the Fund has a twin institution, the World Bank (its formal title is the International Bank for Reconstruction and Development), whose task is to provide long-term finance for the developing countries. Both of them are agencies of the United Nations, and both have their headquarters in Washington.

Thirdly, the IMF is complemented in the trade field by the General Agreement on Tariffs and Trade, which was originally intended to be a temporary stepping stone to an International Trade Organisation, but which has remained as the principal body governing international trade practices, with a small secretariat and a director general. GATT incorporated the same ideals of liberalism and law as the IMF, with the same attachment to freedom of trade and equality of treatment between member states. The essential rules of GATT are that all countries should aim to abandon all forms of quantitative restrictions on trade, and should apply uniform duties on imports, whatever their country of origin. The only exceptions to this principle of most favoured nation (MFN) treatment were British imperial

¹ The US payments deficit is primarily due to large outflows of capital, in the form of overseas investments and aid and US government expenditure overseas such as funding their contributions to NATO, etc., and the war in Vietnam. As to their current account which relates to the balance of trade, this has until very recently not been a serious problem; in fact usually in surplus.

preference, based on historic commercial links, and customs unions (like the Common Market) or free trade areas (like the European Free Trade Association).

In practice, the separation between trade problems (which are dealt with by GATT) and monetary problems (which come under the International Monetary Fund) has come to seem increasingly artificial. Ways are now being discussed for bringing them closer together.

By and large, the IMF system has served the world remarkably well, on three main counts: it has contributed substantially to the liberalisation of international trade and payments, and in so doing has played a significant part in the most remarkable and most sustained period of economic growth that the world has probably ever known; it has established an unpre-

cedented system of international credit, based on collective decision-making; and it has contributed to stable exchange rates.

But it has to be adapted over the years in order to keep pace with other developments in international payments, and adaptations are still going on.

Further reading

Richard N. GARDNER, *Sterling-Dollar Diplomacy*, Oxford (1956).

Roy HARROD, *The Life of John Maynard Keynes*, Mcmillan (1951).

Fred HIRSCH, *Money International*, Allen-Lane (1967).

Robert TRIFFIN, *The Evolution of the International Monetary System*, Princeton (1964).

Pollution in Europe

- 1966: *Accidental oil-spillage in R. Medway. 8000 birds died.*
- 1967: *Torrey Canyon wrecked. Severe oil pollution on coasts of Cornwall and Brittany. 30,000 seabirds died.*
- 1969: *Rhine waters polluted by pesticide discharge at Mainz. 4,000,000 fish died.*
- 1969: *17,000 seabirds found dead in Irish Sea. Total death roll estimated at 100,000. Cause uncertain. May have been an industrial chemical.*
- 1971: *In December dangerous levels of cadmium and lead recorded in river and air at Avonmouth. Smelter closed for two months and official inquiry ordered.*
- 1972: *In January 80 drums of dangerous chemicals washed ashore in SW England after shipwreck.*
- 1972: *In February cyanide drums discovered on refuse tips in Midlands. Emergency legislation passed imposing heavy penalties for the dangerous dumping of toxic wastes.*

The European situation

Europe is an old continent, long settled and long exploited. Its raw material resources have been depleted or reduced to negligible quantities. The spread of agriculture has caused the disappearance of formerly continuous broad-leaved forests, the drainage of wetlands and the reclamation of the heathlands of Northern Europe. As a result of rapid population growth and industrial development, Europe has become increasingly dependent on overseas supplies of raw materials and energy. Its own use of the soil, in response to the enormous demand for agricultural products, has been greatly intensified.

An increasing majority of Europeans are town-dwellers. Manufacturing industries and markets are concentrated in restricted areas, exerting unrelenting pressures upon the environment by the combined demands and wastes of factory and consumer. In these centres huge quantities of water are needed for domestic and industrial purposes and for the removal of sewage and effluents. The air above and within the cities is used as a dumping space for the waste products of chimneys and exhaust systems. The movement of goods and people, without which our cities would atrophy, necessitates the use of cars and lorries, themselves major causes of noise and atmospheric pollution. The visual landscape, perhaps comprising only sprawling suburbs, often has little aesthetic appeal.

In rural areas modern farming practices are further endangering the precarious balance in man's use of the land. The construction of motorways and of tourist amenities is reinforcing the human impact upon the countryside.

The economies of Europe are committed to future growth. The citizen accepts this as a guarantee that living standards will continue to improve. But increases in present styles of production and consumption will inevitably lead to greater waste.

Pollution is a result of the improper disposal of waste. It may be seen as a local problem affecting an immediate

environment. Such a perception is often too restricted since the aggregate of evidence drawn from other localities would reveal a more extensive danger. The complexities of inter-relationships within ecosystems confound most attempts to identify simple cause-and-effect mechanisms and make the isolation of an individual factor and its influence extremely difficult.

Air pollution

The inhabitant of Salford has six times as great a chance of dying from bronchitis as someone living in Eastbourne. A study in West Germany reveals that the sickness rate in large towns is 57 % higher than the average rate for the population as a whole and the expectation of life for a child in a city is two or three years less than for one born in a village. Such harm to the health of city-dwellers is attributed mainly to the presence of dust and toxic compounds in the air, but other agents, such as noise, are also important.

The need for reductions in levels of atmospheric pollution in towns has long been recognised, at least on a local scale; the Dutch town of Haarlem had a by-law in 1608 prohibiting the use of coal in breweries. The British Clean Air Acts of 1956 and 1968 have rid many industrial centres of the heavy yellow pall of smoke. London's winter sunshine has doubled. But in the absence of effective measures the waste products of burned fuel and refinery processes remain a serious menace in many of Europe's large towns. The existence of an Alkali Inspectorate to enforce standards in British factories did not preclude the crisis at Avonmouth in December 1971 when the detection of dangerous quantities of lead in the air in and near the smelter forced it to close. For some years the fall-out of sulphur dioxide emitted from power stations in Northern England has been monitored in Sweden, where it adversely affects tree growth.

The situation in urban areas is acutely aggravated by the increasing number of cars. The following figures for private cars are taken from the UN Statistical Yearbook 1968:

	<i>Millions in 1960</i>	<i>Millions in 1967</i>
France	5.5	11.5
West Germany	4.3	10.7
Italy	1.9	7.3
United Kingdom	5.6	10.6

The affront to the senses of the noise and smell of traffic is blatant but the full effects of the toxic substances in exhaust gases are still uncertain. Investigation has shown that lead concentrations in the air in Zurich during the period 1963 to 1970 increased by 41 per cent. In the summer of 1971 photo-chemical smog, usually associated with Californian cities, was recorded in the countryside of S. E. England.

Three of the difficulties which inhibit government action to protect the environment can be illustrated in the problem of air pollution. Any measures which significantly reduce pollution directly affect production costs and will be borne by the consumer. The Fiat company has announced that anti-pollution devices would increase the production costs by 6 per cent. Many factories would require prohibitively expensive equipment to eliminate all pollutants from chimneys. The increased costs would put many manufacturers in an uncompetitive position in comparison with foreign rivals, a fact which is recognized by those responsible for enforcing British regulations.

The absence of agreements on acceptable standards is a further problem. International variations on permitted levels of exhaust emission from cars already cause difficulties in engine design. The reluctance of Britain and other countries to adopt stringent measures is essentially for commercial reasons.

Man's ignorance of the effects on climate and health of the gradual accumulation of pollutants such as dust and carbon dioxide in the atmosphere is another argument used to discourage widespread control. Until experts agree, such control is impossible, certainly on a global scale.

But the measurable costs of pollution of the atmosphere are very great; in Britain they are estimated at £350 million per annum. Much stronger precautions are economically justifiable though the debate continues as to the urgency of the environmental crisis.

Fresh water supplies

Rivers are a cheap conveyor belt for the removal of unwanted materials. Untreated sewage, metallic residues and chemicals are poured in at rates which the rivers cannot accommodate, so that the natural cleaning processes cease to function. Untreated sewage from towns and farms causes deoxygenation of the water and brings a health hazard. Above Paris the Seine contains about 15 germs per c.c.; downstream the figure is 1,500,000. Post-war industrial development and the expansion of ports accentuates the severe pollution of the tidal reaches of many large rivers.

Through biochemical changes the Lake of Zurich has been rendered "lifeless". Lakes Geneva, Constance and Maggiore are being poisoned, as are many in Eastern Europe. In 1970 a total of 40,000 tons of phosphorous,

salts and nitrogen were discharged into Lake Constance in spite of the existence of an international commission for its protection. Population growth, industrial expansion and the intensification of farming make heavy demands on water supplies. The per capita consumption is already wastefully high; American experiments in metering domestic supplies brought a 50 per cent reduction in use. The aggregate demand in Europe can be met only by expensive storage systems whilst the purification of supplies which have been needlessly contaminated increases operating costs.

National policies for improving water quality vary greatly in effectiveness. In some countries, notably Italy, the situation worsens. In Britain, where appropriate legislation was first passed in 1848, the campaign initiated by the Rivers (Prevention of Pollution) Acts, 1951-1961 has brought improvements. In December 1971 a Government report described 4.3 per cent of non-tidal rivers as grossly polluted, compared with 6.4 per cent in 1938. The lower Thames, formerly 'dead', now contains several species of fish. Plant capacity for sewage treatment has been greatly enlarged. The effective reduction of the effects of chemical applications in agriculture given the present commitment to high crop yields, will be more difficult to achieve.

Over 80 per cent of Europe's lakes and rivers are shared by two or more states. International cooperation is therefore essential. In this context the Rhine is an important example although many others, such as the Danube and the Oder, which is heavily polluted by Czech industries yet remains an important source of water for Poland nearer the sea, demonstrate the same issues.

The Rhine has often been described as a gigantic open sewer. Over 6,000 poisonous substances have been identified in its waters and at its mouth the germ content is 2,000,000 per c.c. French potash mines and German coal and chemical industries dispose of huge quantities of salts and metallic compounds, whilst shipping puts 12,000 tons of oil into the river each year. Yet this sewer is a major source of water for drinking, irrigation and manufacturing in the Netherlands. Population growth and saline contamination of ground-water supplies force the Dutch to rely increasingly upon the Rhine. The hazards of 1969, when an accidental discharge of five barrels of pesticide killed four million fish, underlines the problem. Dutch problems are illustrated by the sale of bottled drinking water from Norway in early 1972.

Since 1950 the Rhine has been the subject of an International Commission for Protection, legalised by treaty in 1965 and involving five countries. The inadequacy of this organisation is confirmed by the proposal in March 1972 to set up a new agency with strong powers of decision.

The seas around Europe

"There is only one pollution, because all toxic substances end in the ocean" (Commander Cousteau, speaking in 1970 to the Consultative Assembly of the Council of Europe). In the seas accumulate the non-biodegradable agricultural chemicals, halogenated hydrocarbons, heavy metals such as mercury, cadmium, zinc and lead and the deliberately dumped containers of obsolete poisons and radioactive materials. Accidental discharges of oil and chemicals often have an immediately alarming impact upon marine habitats but it is the insidious build-up of contamination which causes the most extensive damage. According to Commander Cousteau, the intensity of sealife has diminished by 30 per cent to 50 per cent in the last twenty years throughout the world, whilst the situation is more serious in areas such as the Mediterranean, the Baltic and the North Sea. Resorts have proliferated along the littorals of these seas, ruining the landscape and, with their untreated effluents, destroying their main attraction. The Channels and the North Sea carry the most congested shipping routes in the world and are consequently exposed to further risks.

DEFINITION	EFFECTS	CAUSES
<p>Air Pollution: Physical and chemical changes through introduction of dust, smoke, gasses, such as SO₂, CO, CO₂, metallic and radioactive substances. Over-heating of urban areas.</p>	<p>Reduction of sunlight. Increased acidity of rain and soil. Malformation and prevention of plant growth. Lung diseases and contamination of blood. Corrosion of buildings and poisoning of water.</p>	<p>Emissions from factory and domestic chimneys and cars. Nuclear experiments. In Germany, 60 per cent caused by transport, 18 per cent by industry, 13 per cent by power stations, 6 per cent by domestic heating, 3 per cent miscellaneous.</p>
<p>Noise Pollution: Any disagreeable auditory sensation. The danger threshold is about 85 decibels.</p>	<p>Deterioration and, after prolonged exposure, permanent loss of hearing. Nervous disorders. Accidents and inefficiency. 54 per cent of Germans complain of noise nuisance.</p>	<p>Road traffic. Aircraft, industrial machinery.</p>
<p>Fresh Water Pollution: Changes in composition through toxic substances and organic materials. Phosphates stimulate bacteriological activity, causing deoxygenation; bacteria die and natural autopurification ceases.</p>	<p>Death of plants, fish, birds, etc. Fouling of drinking supplies. General health hazard through increased germ content. Expensive purification necessary.</p>	<p>Chemical and organic effluents from industry, households, farms (pesticides, fertilizers, detergents, sewage, etc.). Warm effluents from power stations.</p>
<p>Marine Pollution: Contamination, causing physical and chemical changes, through organic, radioactive, chemical and mine-wastes.</p>	<p>Death or decline of marine life. Health hazards. Oil-ling of coasts. Death of sea birds.</p>	<p>Cumulative effects of air, river and soil pollution. Deliberate and accidental discharges by shipping. Dumping of poisons.</p>
<p>Soil Pollution: Broadly defined it includes man-induced deterioration of fertility and accelerated erosion. Also poisoning by waste-dumping.</p>	<p>Disappearance of plant species, decline of micro-organisms in soil. Loss of top soil. Heavy fertilizer applications with diminishing returns.</p>	<p>Atmospheric pollution fall-out. Household debris. Non-biodegradable materials (e.g. plastics) and toxic substances (e.g. cyanide).</p>

In the North Sea, a major source of protein for Europe, the exploitation of oil and gas-fields adds to fears for its fishing resources already aroused by evidence of heavy pollution. There are many local examples of fatal contamination. In N. E. England research has revealed abrupt contrasts in marine life between clean shores and those affected by coal waste. Numerous mortalities amongst terns in the Danish Waddenzee were traced to a pesticide carried by the Rhine.

The physical constraints of the Baltic and the Mediterranean, both virtually enclosed and fed by polluted rivers, have been emphasised in recent years by outbreaks of illness caused through bathing and eating contaminated fish. Drastic protective measures are urgently needed.

The general alarm over the deteriorating situation prompted a series of international meetings, culminating in the Oslo agreement between twelve West European countries in February, 1972, to prevent the chemical dumping of waste in the North Sea and adjacent Atlantic areas.

The soil

The complex associations of organic and inorganic constituents which form the living soil have been modified and nurtured over the farmlands of Europe by centuries of husbandry. Serious mistakes have occurred, as seen in the bare hill-slopes of Southern Europe, but in many regions an apparently stable and high level of fertility has been achieved.

The 1939-1945 war and subsequent farm-support programmes have brought an intensification of farming. Technological improvements include the use of pesticides and weedkillers. The increased application of inorganic fertilizers, often as a substitute for animal manure, is illustrated by the average amounts used in Belgium per hectare of cultivated land in kg:

Year	Nitrogen	Phosphates	Potash
1910	13.9	19.8	4.1
1950	41.2	47.5	51.1
1967	94.8	90.0	107.7

Monocultural practices and the substitution of pesticides for natural agents which have disappeared, or are unable to operate effectively in the artificial conditions, have reinforced the dependence on chemicals. Livestock rearing on factory principles has brought problems of disease control and waste disposal. The aim is quantity of output through increased capital investment per worker; the result is increasingly unnatural methods of food production.

The social costs of changes in farming methods, though not readily measured, must be set against this higher productivity. The disappearance of wildflowers and hedgerows, the greater mortalities amongst seed-eating birds and their predators, the destruction of wild-life habitats and the long term effects of chemicals upon water resources and human health must all be considered. The soil itself suffers. In the clay soils of the English Midlands the structure is breaking down; the quality of the Hampshire Downlands is being impoverished; in East Anglia top-soils are eroded.

Farmers recognise these threats to their livelihood. But they are subject to economic pressures which necessitate the use of techniques inconsistent with principles of conservation.

Agents for the protection of the European environment

Three main categories can be distinguished:

1. There are numerous voluntary bodies, of varying stature, representative breadth and effective influence. These would include, briefly to indicate their range, the Noise Abatement Society, bird protection societies, the Friends of the Earth, the Conservation Society and the Club of Rome. Some, like the latter, have an international composition and the support of eminent scientists and leading industrialists. These bodies may be concerned with a specific issue or may take a comprehensive brief, as represented by *Blueprint for Survival*. (see "Further reading")

2. National governments are extending the range of measures against pollution to remove obtrusive dangers and to combat harmful effects of modern technologies. The extension of monitoring and research projects is exposing the inadequacies of existing laws and standards, but government action shows great variation according to the nature and degree of awareness of the problems. In France and in Britain "Ministries for the Environment" have been set up and limited programmes defined. Also in Britain there is a permanent Royal Commission working on recommendation for pollution control. Rumania has a commission for combating pollution whilst in Hungary there is a committee for the protection of air purity. But in only one European country, West Germany, has a comprehensive and long term programme been introduced; the necessary laws are now being passed.

Public attitudes towards conservation policies are confused or apathetic and the machinery by which they could be implemented is not yet available. Unilateral action to control particular forms of pollution are numerous, but essentially the need is for cooperation between nations.

3. There are many international organisations intent on securing safeguards for the environment. It has been observed that "there is already a plethora of organisations occupying themselves with this question" (M. Cravatte, European Conservation Conference, 1970). In addition to the many non-governmental bodies these include the UN, OECD, the Council of Europe and NATO. Each has initiated and is sponsoring major research programmes.

The information available from research projects is a necessary prelude to legislation, but in the past these projects have rarely been coordinated nor has financial and political support been commensurate with the gravity of the dangers. Where the problems are known and international organisations make recommendations these are not unanimously adopted by member government. This is shown by the history of the Rhine Commission. No measuring apparatus or pollutant threshold has been approved by all European states.

In this situation, limited regional agreements are more readily achieved since they involve fewer signatures. Where there is cooperation across a range of economic and social activities this can facilitate harmonisation of pollution control. The need for such agreement is emphasised in a report submitted by the Commission of the European Economic Community in July 1971 (First Communication of the Commission on the Community's Policy on the Environment: Brussels SEC [71] 2616). The report stresses the fact that one major obstacle to improved measures is the costs which would prejudice the competitive position of national industries.

In February 1972, Dr. Mansholt, the Community's commissioner responsible for agriculture, proposed a radical policy for environmental protection in a letter to the Commission's President. This advocates the curbing of growth and consumption and the abolition of social benefits for large families. Rigorous central planning would ensure for everyone a minimum on which to live and a five year

plan is suggested by which a "closed circuit" or recycling economy would be developed. Dr. Mansholt believes that by meeting the far-reaching implications of his proposals an enlarged Community could lead the world in the search for a stable society in a stable environment.

In March 1972, the Commission put forward a programme which is based on the principle that the polluter pays. It urges the adoption of regulations on pesticides and food ingredients by 1973 and recommends that by 1974 common rules on water, air and noise pollution should be in force.

The choice

As the information on environmental deterioration accumulates so anxieties increase. But an exaggerated concern for the environment is itself in danger of engendering disbelief. To that disbelief is added the confusion caused by controversy between experts.

There are those who insist that we must stabilise or reduce population sizes and forgo material advances. Others claim that the problem is essentially a technological one which can be solved technologically. Another powerful body of opinion asserts that "doom-mongering" is not justified by the facts. No one can forecast inevitable population growth to a disastrous level; even the evidence of the harmful effects of pesticides, it is claimed, is largely circumstantial.

Amongst the proponents of these different arguments, the degrees of objectivity and knowledge vary greatly. Certainly the chances of sound judgement are not enhanced by hysterical alarm. But proof of the arguments of those who dismiss such alarm as irrational seems to require a kind of "brinkmanship" which responsible people would be wise not to countenance.

The choice before European society would seem not to be whether we act to avert disaster, but how quickly.

Further reading

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Nature: Vol. 235; Jan. 14 - *The Case Against Hysteria*, (Jan. 28).
Catastrophe or change? (These reply to *Blueprint for Survival*).
The Guardian (Jan. 26 and 28, 1972) and
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(These present the basic arguments)
The Guardian (March 8, 1972) (Gives extracts from *The Limits to Growth*, an M.I.T. report commissioned by the Club of Rome. This report influenced Dr. Mansholt in the writing of his letter.)

New Towns in Western Europe

*Articles in previous issues of this publication have examined general aspects of urbanisation in contemporary Europe*¹. In this article, we shall look more closely at one feature of the urban phenomenon: the new town. In its modern (i.e. 20th century) development, the idea of creating planned new towns has originated in Britain and spread to other parts of Europe. Although other countries face similar urban problems, one finds marked differences between countries in the solutions which are being introduced.

Towns and cities grow or decay according to the changing economic, social and political climate of the regional environment in which they are located. Economic expansion or decline affects employment opportunities which may result in in- or out-migration for urban areas. Population growth, traffic congestion, air pollution and other factors may require serious modification of prosperous urban centres. Destruction of buildings in war time bombing raids presented opportunities in some European towns and cities for radical new designs. Man himself changes in his environmental needs, as the expansion of car ownership has strikingly demonstrated. The new town concept has been developed as an important contribution to the contemporary European search for an environment appropriate for man in a densely populated continent.

The new town movement has its origins in late nineteenth century Britain. Seeking a solution to the problem of housing the poor in London, Ebenezer Howard proposed² the creation of carefully planned garden cities. The garden city was envisaged as a small town with a population of no more than 30,000 people. Separated from other urban areas by a protective green belt of agricultural land, the town would be zoned into planned industrial, residential, commercial and cultural districts, or wards. The responsibility for planning and developing such a town would be vested in a public authority, so that private speculators could not interfere with the master plan for the town. From these ideas emerged the plans for the towns of Letchworth and Welwyn Garden City. An adaptation of the garden city idea was the concept of the garden suburb and this concept was to materialise in several European cities in the years following the first World War.

The influence of Howard's ideas can be traced in the writings of Lewis Mumford, Catherine Bauer, Clarence Stein, Raymond Unwin and Le Corbusier. In the writings of Patrick Geddes, the new town concept was extended; instead of new towns appearing simply as solutions to the over-crowding of existing cities, he conceived of new towns as being essential components in plans for regional economic growth. Hence some new towns were seen as growth points for industrial location and expansion, integral parts of major economic regions.

These ideas, much discussed in planning and architectural circles, reached fruition in Britain in the Greater London Plan prepared by Patrick Abercrombie and published in 1944. Already the report of the Barlow Commission³ had described in detail the advantages and disadvantages of British large towns. Abercrombie proposed the creation of a ring of satellite towns surrounding London to accommodate overspill population consequent upon a massive rehousing programme. A reserved green belt in which building would be rigorously controlled should surround the city.

The passing of the New Towns Act in 1946 provided Britain with the administrative structure on which to build a programme for developing new towns. This structure gave Britain a unique advantage in Europe and it should be borne in mind when comparisons are made between Britain's progress in new town development and the experiences of other European nations. The 1946 Act entrusted the creation of new towns to development corporations appointed and financed by the central government. Although locally elected authorities would be responsible for certain features of town life, as in any other British town of similar size the development corporation was given the power to acquire sites and to provide houses, factories, commercial buildings and public services. The corporation was to be financed by government loans.

Between 1946 and 1950 twelve new towns were designated, eight in the London ring (Stevenage, Crawley, Hemel Hempstead, Harlow, Hatfield, Welwyn, Basildon and Bracknell), two in Scotland (East Kilbride and Glenrothes) and four in other parts of Britain (Newton Aycliffe, Peterlee, Cwmbran and Corby). Apart from the designation of Cumbernauld in 1956, there was a lull in the programme until 1961 when eleven more towns were designated. A distinctive feature of the second wave of new towns has been the attention paid to accommodating the motor vehicle. All the plans contain a town centre comprising a mixture of commercial, civic, cultural and social buildings, residential districts, sometimes designed as neighbourhood units with neighbourhood centres, and factory estates.

Parallel to the new town programme and stemming from the Town Development Act of 1952, a programme of expanded towns has been instituted. "This enables large cities and small towns to enter agreement whereby accommodation and employment would be provided in small

¹ *The urban phenomenon in Europe*: Part I in Issue No. 10 and Part II in Issue No. 12.

² *Tomorrow: A Peaceful Path to Real Reform*, by E. Howard, pub. 1898; the book was revised in 1902 and the title changed to *Garden Cities of Tomorrow*.

³ *Royal Commission on the Geographical Distribution of the Industrial Population*, Report and Evidence (see "Further reading" at end of text).

towns for those people who could not be rehoused in the large city when its slums or near-slums were demolished and redeveloped at lower densities. The operation was financed jointly by government, city councils and county councils⁴. Cities such as Manchester, Liverpool, London, Newcastle and Birmingham established overspill links with surrounding towns. At the same time, these cities engaged in massive programmes of suburban development and inner city renewal.

New towns, expanded towns, suburban growth and inner city comprehensive redevelopment, these features of British post-war planning are found in other parts of western Europe. Though other European nations may lack the political and administrative structures existing in Britain, when faced with similar urban problems they have come up with similar solutions. Whereas in Britain the expression "new town" has a very precise meaning, the expression must be used more loosely when applied to other countries.

In the same way as the British post-war new town programme was heralded in a report prepared for the capital city, so in France did a new town programme emerge. The first French new town proposals were published in 1965 in the *Schéma directeur* for the Paris Region.⁵

In the immediate post-war period, France faced a serious housing problem. The inter-war period was one of stagnation in the house building industry and the problem was aggravated by the losses of buildings due to military destruction during the war. Reconstruction of towns rather than urban expansion was the important priority in the late 1940's and 1950's. Industrial prosperity, rural depopulation and a rising birth rate were factors in the increased demand for housing in post-war France.

In 1958 housing priority areas were designated (Referred to as ZUP: *Zone à urbaniser en priorité*) and these were predominantly suburban districts in which high rise apartment blocks were hurriedly constructed. These *grands ensembles*, completed mainly in the 1960's, were dismissed by one observer in the phrase "Economist's solution, urbanist's nightmare". In the Paris region some of these housing districts contained between thirty and fifty thousand people. In population size they are comparable to the first generation of British new towns but here the comparison must stop for the French urban zones were severely functional in appearance and devoid of social and recreational facilities. As a reaction to these initial mass housing ventures, the latest *grands ensembles* have been conceived quite differently. The change can be witnessed in the southern suburb of Toulouse-Le Mirail. This suburb, nearing completion, is designed to accommodate 100,000 people in high density high-rise buildings. In Le Mirail, attention has been given to the non-housing needs of the people and incorporated into the plans are social, recreational and educational facilities.

The housing priority zones were only a partial solution to France's housing problem. Regional planning studies in the 1950's and early 1960's explored the relationship between Paris and the provinces (*Paris et le Désert Français*). New policies were framed for promoting selected provincial urban centres as countermagnets to Paris. In 1964, in preparation for the Fifth Plan (1965-1970), eight such *métropoles d'équilibre* were designated, five of which were fusions of neighbouring large towns to form single planning units. In 1966 special metropolitan planning organisations (*OREAM, Organisation Régionale d'Études d'Aménagement d'Aire Métropolitaine*) were established for major areas where future expansion would be concentrated—Lower Seine, Greater Marseille, the Nord, Lyon/St.-Etienne, Nancy/Metz, Nantes/St.-Nazaire and Bordeaux. In addition to the Paris region, it is in these areas that attention has been given to the creation of new towns.

⁴ *Towns in the Making* (see "Further reading" at end of text).
⁵ See E.S.T.S. No. 12. "The Urban Phenomenon in Europe II."

The Parisian *Schéma directeur* is tackling the major problem of accommodating an anticipated growth of five million more people by the end of the century. Already the Paris agglomeration contains almost 20 per cent of the population in France on little more than 2 per cent of the nation's surface area. At the same time, the plan has outlined the inadequacies of contemporary Paris, particularly the underdeveloped suburbs, the prohibitive costs of development in the inner city and the over-dependence of the city upon the single central core. The centralisation of French national life upon Paris is legendary. As M. Piquard reported:

"Paris is the city in which one seventh of the French population is concentrated. Paris is the political capital of the country and has one fourth—500,000—of all French government civil servants. It is also the country's intellectual capital with 33 per cent of its college and graduate students, 65 per cent of its artists and writers, and 54 per cent of its newspapers and publishing houses. In addition, Paris is the business capital and accounts for half of the country's business turnover, and 64 per cent of the nation's companies—including the leading ones—have their head offices in the city. Lastly it is the industrial capital, with a quarter of all industrial workers (1,600,000), 58 per cent of the electrical construction industry, 64 per cent of the car industry and 80 per cent of the motion picture industry⁶."

Just as the Greater London Plan proposed a number of satellite towns outside London so did the *Schéma directeur* propose the creation of a number of new satellite towns for Paris. Originally eight sites were suggested, but these have since been reduced to five:

New Town	Location	Planned Pop. in 1985
1. Melun-Senart	30 km SE of Paris	300,000
2. Saint-Quentin-en-Yvelines	25 km SW of Paris	300,000
3. Vallée de la Marne	10 km E of Paris	300,000
4. Evry	30 km S of Paris	300,000
5. Cergy-Pontoise	25 km NW of Paris	250,000

Work on these new towns is already well advanced. It is assumed that the new town centres will be completed within the period of the Sixth Plan (1971-1976). Already some 200,000 people have moved in to Evry. The original target figure of 300,000 should be reached by 1975 and it is now envisaged that the eventual population will be between 400-500,000.

In addition to the new towns around Paris within the inner suburban ring, renovation has begun on a massive scale in six urban centres. These centres are La Défense-Nanterre, St.-Denis, Créteil, Versailles, Bobigny and Choisy-le-Roi-Rungis. These restructured urban nodal points will serve areas housing between 300,000 and 1,000,000 people. Their commercial, industrial and social facilities are comparable with those provided in major French provincial cities. The new business centre of La Défense comprises 1.5 million square metres of redevelopment, mostly office accommodation for some 100,000 employees. With twenty tower blocks each rising to over 200 m, this will rank as the largest such development in Europe. Four of the new urban centres coincide with *préfectures* of new departments created in 1964: Versailles (Yvelines), Nanterre (Hauts-de-Seine), Bobigny (Seine-St.-Denis), and Créteil (Val-de-Marne).

In other parts of France, new towns are proposed in metropolitan development plans. Thus in the proposals for

⁶ *Regional Planning in France* (see "Further reading" at end of text).

the Basse-Seine, the creation of a new town at Le Vaudreuil, at the confluence of the Eure and Seine, is seen as an overspill town for Rouen. Similarly in the development plan for the metropolitan region of Lyon-St.-Etienne-Grenoble, the creation of a new town at l'Isle d'Abeau is proposed. Sited 35 km south-east of Lyon and 70 km from Grenoble, this town should have a population of 85,000 by 1985. In the Nord region a new town at Lille-Est, between Lille and Roubaix is planned with a population target of 63,000 in 1985. Finally in the Marseilles metropolitan plan new urban expansion is proposed for both sides of the l'Étang de Berre. On the east side, a town with a population of 110,000 is planned and on the west side, an even larger growth, associated with the massive industrial expansion at Fos, is planned. Here a town with a population of 215,000 is being developed.

As in Britain these new towns are seen as separate units from the urban centres with which they are associated. They are not designed as dormitory suburbs. Thus these French new towns will contain not only homes, schools, shops, social and cultural facilities but also places of work, factories, office buildings, research laboratories, and warehouses. The facilities of the town centres will cater for visitors from neighbouring settlements as well as for the new town residents. As in British new towns a variety of building types is planned for the residential districts, including individual family houses, blocks of flats of varying levels, and variable street patterns are proposed. A distinctive feature of French new town plans is the inclusion of a lake for water sports, for fishing and for lake-side strolling.

Following the British example, an administrative structure for the creation of French new towns has been produced. Proposals for new town sites are included in the regional plans which are submitted, in the first instance, to a central committee for initial discussions. (This committee is the GCPU: *Groupe central de planification urbaine*.) From here the proposals are sent to the national planning committee. (CIAT: *Comité interministériel pour l'aménagement du territoire*.) If this committee approves the proposal, the Prime Minister, on the advice of the *Ministère de l'Équipement et du Logement*, appoints the head of a development team which will be responsible for the detailed planning of the town. This team is comparable to the British development corporation. In May 1970 a new body was formed, *le groupe central des villes nouvelles*, to coordinate the administrative and financial arrangements for the new towns. By a law of June 1970, the French Parliament has defined the relationship between the communes in whose territory new towns are to be located and the new authorities in the new towns.

Some interesting comparisons can be drawn between the British and French experience of new town development. The nine French new towns have been conceived as separate entities playing an important role in the most highly developed economic regions. Initial interest has focussed on the capital cities in both countries. The need for a special administrative structure has been recognised by the French government. Where the first French new towns differ from their British counterparts is in the population targets set for the towns. In Britain, the first new towns were set to grow to populations between 30,000 and 50,000. In France, the initial target figures were between 100,000 and 300,000, recently revised target figures exceed 300,000. In Britain, such developments would be described as new cities. By the early 1960's it was clear in Britain that the small sized new towns could only contribute in a very small way to Britain's urban problems. This lesson has been well learned by the French, who, faced with housing problems far more acute than Britain's, have realised that towns of a large size must be planned if they are to make a lasting impact.

In the Netherlands, new towns are seen as solutions to two quite different problems. On the one hand, new towns have been planned as focal points for settlement on the reclaimed land of the polders, on the other, they are

planned as parts of the intensively settled region in the south and west of the Netherlands.

On the polders, the planner is "given flat, two-dimensional country and variety is not provided by nature. One cannot simply let one's imagination go and introduce variations unless they fit in with the scheme of things, because to do so would be inappropriate in an economy aiming at rationalisation, and even more so because any pointless variation would instantly strike one as artificial⁷."

On the Ysselmeer polders, it was found necessary to plan hamlets and villages. Whereas a hamlet is seen as simply a concentration of dwellings, a village contains shops, cafes, schools, churches, a village hall or other club building and small workshops. The complexity of religious life in the Netherlands meant that a new village would need at least three churches and possibly three schools. Associated with the churches are clubs, many having their own buildings, and the political parties. One-family houses with front and back gardens were designed for agricultural labourers and these were placed off the main thoroughfare which was lined by the main village buildings. On the new polders, the problem of urban development is clearly quite unlike the problems already referred to in Britain and France. But the problem of developing new forms of settlement in rural areas is not unique to the Dutch. Similar problems are experienced in the Scandinavian countries, in Scotland, parts of France and in southern Italy.

Determining the number of villages, their population size, their location and the details of the development plans, proved very difficult in a period of rapid agricultural change. Lessons learned in the first settled polder, the Weiringermeer, in the 1930's resulted in changes in the post-war settlement of the much larger North-East Polder. In the latter not only were ten small villages planned, with populations ranging from 400 to 3,000, but also a larger settlement at Emmeloord.

Construction at Emmeloord began during the second World War and its population is now approximately 10,000. The site is dominated by a grid of canals and the intersection of main roads. At the centre of the town is a square bounded by office buildings and a large block incorporating a hotel, theatre and a farmers'exchange hall. Residential districts are separated from each other by green zones. Shops, educational facilities, hospitals and administrative buildings make the town the regional focus for the whole polder. Not all the housing at Emmeloord has been provided by the government appointed Board responsible for the planning and development of the polders. An allocation of sites for private development has been made within the town.

In marked contrast to the settlement of the polders, the intensively settled regions of the south and west of the Netherlands require different planning solutions. Here it is envisaged that the future population growth will be housed in extensions to existing urban centres. Described in a government report as "concentrated deconcentration" this policy is one which permits the development of carefully planned new urban units in close proximity to established centres. The need to protect scarce, high quality agricultural land must be balanced by the concern in the Netherlands to provide high standard housing in aesthetically pleasing environments without destroying the essential characteristics of Dutch town life. The Dutch are particularly anxious to protect their older buildings and to retain many of the traditional street patterns in the old towns. The careful planning for the future of Dutch urban centres runs parallel to developments in Britain. Thus in 1913, when the garden city and garden suburb ideas were being put into practice in Britain, the plan for the Rotterdam Garden Suburb at Vreewijk was published, and in 1915 the plan for the new

⁷ *Planning and Creation of an Environment*, a report published by the Netherlands Government, prepared by the Royal Institute of Netherlands' Architects.

growth at Hilversum, near Amsterdam, was published. More recent developments are those at Hoogvliet and Spijkensee, on the outskirts of Rotterdam and Zoeternecht near The Hague.

The extensions to the Dutch urban concentrations can be seen as a compromise between the growth of large suburban communities grafted on to existing cities and acting as little more than dormitory settlements serving the city centre and the outer ring of new towns characteristic of London and Paris.

The planning of new towns which have a dormitory function but appear as satellite towns has been achieved in Sweden. Unlike France, the planning of the new towns is not regarded as a function of the national government. In Sweden, planning is a local and regional function. As in Britain and France, the need for planning has become most urgent at the capital city. The solution to housing a rapidly increasing population was the designation of six new towns situated to the south and west of the city and linked to the centre by a fast, efficient electric rail system. The towns, although having a dormitory function, also contain certain commercial, administrative and social facilities. The five new towns, namely Vallingby, Hasselbystrand, Farsta, Skarholmen and Tabby, are located within thirty miles of the centre of Stockholm and are characterised by the skill the architects and planners have shown in blending modern buildings with a landscape of trees, bare rocks and water. Like the British new towns, the population of the Swedish towns is planned to reach 30,000 in each case. Surrounding the satellite new towns are smaller settlements which it is assumed will look to the new towns as their local centres.

A different type of new town development can be seen in parts of Norway, Denmark, Germany and Italy. These are the industrially based new towns. The location of a new large industrial concern in a relatively sparsely populated area is generally followed by the growth of a town to house the new employees and their families. The provision of cultural and social facilities, and sometimes medical and educational facilities is sometimes made by the industrial firm. Typical of the industrially based new towns are Mo-i-Rana and Ryukan. Mo-i-Rana is situated just south of the Arctic Circle and owes its growth to the location of Norway's largest integrated steel mill. The mill was opened in 1955 and now the town has a population of 14,000. This figure is small by British or French standards but in Norway where many small rural settlements are experiencing declining populations this is relatively large. Other Norwegian towns have grown up in the 1960's close to smelters or chemical factories located near to hydro-electric power stations. Examples are Ardal and Hoyanger on the Sognefjord.

The small Norwegian industrial new towns have their counterparts in Denmark. In the 1960's such towns as Hirtshals, a new fishing community, and Munkebo, a shipbuilding town near Odense, have been planned. The most notable German industrial new towns were founded in the years immediately preceding the second World War. Wolfsburg was designed to accommodate the workers at the Volkswagen car plant which dominated the town. Similarly the town of Saltzgitter, dating from 1938, was designed for steel workers. In the post-war period, towns designed along new town lines have been planned at Sennestadt, near Bielefeld, and at Neugablonz, an industrial town designed to cater for some of the numerous refugees who poured into Germany after the war. In the northern Ruhr, two industrial new towns were developed for employees from particular types of industry : at Wulfen the town is associated with the coal mining industry and, like Glenrothes in Scotland, the fortune of the town has ebbed with the decline of the coal mining industry. While Glenrothes recovered and grew with the advent of the electronics industry, Wulfen has adjusted its plan to a reduced population growth and its present population does

not exceed 10,000. In the same region is the new town of Marl, which is linked to the chemical industry.

In Italy, the most rapid industrial urban growth is being experienced in the Mezzogiorno. Here the location of petro-chemical installations, metallurgical and other manufacturing industries has seen a rapid growth in population in such towns as Taranto, Brindisi and Bari. When considering these growing towns, one encounters the difficulty of distinguishing between new towns, defined in a precise, special way, and those towns which exhibit many of the characteristics associated with new towns but which are generally considered as expanding towns.

Rapid population growth is a characteristic of all the nations in western Europe as it is the trend towards increasing urbanisation. These pressures are most noticeable in the older large cities. Replacing out-dated buildings and providing accommodation for newcomers to the cities has forced local and national authorities to seek adequate solutions to the ensuing housing problems. Intensive high rise building in the inner cities, suburban growth and the construction of complete new towns have been the most frequently adopted solutions. Providing housing is only a part of the solution. Access to fast forms of transport, provision of industrial and commercial employment facilities, the allocation of space for recreation and social activities, the segregation of vehicular and pedestrian movements: these are some of the features required if the new environments are to be worth living in. It is an easy exercise to contrast the worst features of older urban areas with the best features of the new towns, but the deficiencies of the new towns should not be overlooked. In Britain, there has been a concern over the social composition of the new town populations, there is the emergence of the "new town blues" phenomenon associated with boredom and loneliness for housewives who spend their lives in what have sometimes been described as concrete deserts; for teenagers there are different pressures which result in vandalism and anti-social behaviour. To plan a complete new town is clearly a difficult task in the light of the rapid changes occurring in advanced industrial societies. Already it is possible to distinguish phases of new town development even in the short space of fifty years. The original British new towns were intended for populations of some 30,000. These towns were seen as "towns in the country", having the same measure of isolation from other population centres as medieval villages. Increasing population pressure resulted in an increase in target figures and to the provision of higher density residential areas. The arrival of the motor car presented new problems and a clear distinction exists between those plans made before the full appreciation of the effects of the motor car had been considered and those prepared since. The most recent trend is clearly seen in France where the new towns are conceived as major urban centres with population targets in excess of 300,000 and where these towns are seen in regional contexts. The modern new town is an integral part of a regional urban network, providing social, recreational, educational and commercial facilities for large areas. This concept is distant from the original idea framed by Ebenezer Howard.

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Multinational Corporations: Problems confronting Europe

"The experience of General Motors in the overseas business has, with appropriate variations, been duplicated many times by business corporations of many nations. The resulting global pattern of mutual interests and associations cuts across national boundaries and constitutes an interwoven network for the transfer of knowledge, administrative skill and technical competence that cannot fail to be progressively more meaningful in man's search for a better way of life."

*Dean of the Graduate Business School,
Columbia University.¹*

"What's good for General Motors is not necessarily good for the USA. What's good for Mitsubishi or Toshiba is not necessarily good for Japan. What's good for Lever Bros. is not necessarily good for the United Kingdom. What's good for SKF is not necessarily good for Sweden. What's good for Massey-Ferguson is not necessarily good for Canada. In fact, it may well be that General Motors doesn't know what's good for General Motors much less for the USA."

*Paul Jennings A.F. of L - C.I.O. (a leading trade union leader)
to US Congressional committee.*

The term "Multinational" is commonly applied to the large international companies whose names are instantly recognised in most countries: Ford, Boeing, Mars, IBM, Nestles and Coca Cola being among them. Being in such common usage the term has become rather imprecise and often interpreted xenophobically to indicate US direct investment in other countries. This does represent an important feature of these corporations but for a more meaningful understanding of the operations undertaken by "Multinational" corporations a definition is required, which is more clear and less confusing.

Size as such is not necessarily a good indicator of a company being "multinational"; for example the state owned British Steel Corporation has all its production facilities located within the United Kingdom and yet although one of the largest industrial organisations in the world is not a multinational company. The essential criteria are that the firm should have production facilities in a number of countries outside its national base, and that the international operations of the firm satisfy a coherent strategy which is established by the head office of the parent company. Each individual multinational corporation has its own particular global strategy; some are highly centralised while in some cases local management is relatively free of detailed head office control. These strategies are related to the managerial policies of the parent company; the problems

encountered in various host countries such as different languages, legal systems, and governmental pressures; and the type of product(s) being produced. For example, a firm making (say) furniture, is likely to rely on local knowledge of taste and operate in a less centralised manner than would one making (say) computers where the technical skills of the parent company are so important.

Trading organisations with considerable overseas activities are not a recent development and the location of production centres in other countries goes back at least one hundred years. However, the post-1945 changes in technology and marketing have made significant increases in the international operations of large corporations possible and it is this development which gives rise to so much interest and concern. Singer sewing machines, National Cash Register, and Eastman-Kodak were manufacturing in Europe before 1914; between 1918 and 1939 General Motors and Ford were assembling and producing cars and trucks in the United Kingdom, France, Germany and Poland; but it was between 1954 and 1968 that US direct investment in Europe grew seven and a half times to a book value of twenty billion dollars and European direct investment in the US grew at nearly as fast a rate. In the period 1945-1970, US based companies had established more than eight thousand subsidiaries in Europe, most of these in manufacturing and most in the countries of the EEC. US and European direct foreign investment is mainly in

¹ See introduction to Frederic Donner's, *The World Wide Industrial Enterprise: Its challenge and promise*, p. ix.

high technology industries in concentrated sectors² where large outlays on capital equipment are necessary to maintain market shares and exploit new techniques; or sophisticated marketing is a necessary adjunct to the production process. Among the sectors in which they operate are petroleum, chemical, automobiles, soap and detergents, telecommunication equipment, electronics, farm and construction machinery and pharmaceuticals. In each of these sectors a few large firms account for the bulk of each western European countries' total market and of these the major firms are US based multinationals, e.g. Esso, Dupont, Union Carbide, Ford, General Motors, Proctor and Gamble, International Business Machines, Caterpillar Tractors, International Harvester and Parke-Davis; it is only Royal Dutch Shell in petroleum which is really comparable in size to the US giants. That is not to say that in these sectors European firms are insignificant; in chemicals ICI, Rhone-Poulenc, Hoechst, Bayer and BASF more than hold their own as do Ciba-Geigy in pharmaceuticals, Phillips, Siemens and GEC in electrics, Dunlop-Pirelli in tyres and Volkswagen in automobiles; but the pace-setters are in the main the US giants.

Irrespective of the absolute scale of their operations within the European national economies, their location in the main growth sectors is most significant. That these main growth sectors are also those where the multinational firms are most active leads to a situation where national governments wishing to stimulate economic growth are dependent upon the investment decisions of firms who pursue a global rather than a national investment strategy. There is no obvious reason why their objectives should consistently coincide.

Of the advanced industrial economies, national income grew most rapidly in the countries of the EEC; in these countries, US firms have been increasingly directing their investment. Japan, whose economy grew fastest of all, is a special case, for there are legal obstacles to foreign firms owning a controlling interest in Japanese firms; although there is one notable exception, International Business Machines, which has been allowed to produce computers in Japan.

Fast economic growth has both qualitative and quantitative effects upon the demand for consumer and capital goods; rising real incomes enable more of each type of good to be purchased, but growth instills a

The largest US and European firms in selected sectors (1970)

USA		European	
	Sales (£millions)		Sales (£millions)
Petroleum and oil products:			
Standard Oil:	6,847	Royal Dutch Shell (N/UK):	3,950
Mobil Oil:	3,077	British Petroleum (UK):	2,243
Gulf Oil:	2,546	EHI (I):	936
Texaco:	2,445	Compagnie Française des Pétroles (F):	631
Cars:			
General Motors:	10,123	Volkswagen (G):	1,611
Ford:	6,148	Daimler-Benz (G):	1,092
Chrysler:	2,938	British-Leyland (UK):	970
		Fiat:	951
Electrical:			
General Electric:	3,520	Philips Electrical (N):	1,518
IBM:	2,999	Siemens (G):	1,120
IT & T:	2,281	GEC-AEI (UK):	970
Western Electric:	2,035	AEG-Telefunken (G):	814
Westinghouse Electric:	1,462		
Chemicals:			
Dupont:	1,513	ICI (UK):	1,355
Union Carbide:	1,222	Bayer (G):	1,221
Monsanto:	808	Montedison (I):	1,109
Dow Chemical:	749	Hoechst (G):	1,064

Source: *The Times 1000* (1970-1971).

² A concentrated sector is an industry where a few firms produce a high proportion of total output, this usually results in considerable reduction in competition the largest firms using advertising and technology as their main competitive weapons rather than price. Markets of this type are most prevalent in advanced industrial economies and are termed by economists as oligopolistic.

psychology which increases the level of investment and hastens the introduction of new technology. Equally as incomes increase the range of goods which the individual is able to purchase expands and firms innovate

to satisfy and through marketing create new and increasing demand.

National governments are confronted with a dilemma. On the one hand the international corporation brings growth inducing investment, new technologies and work, while on the other important areas of economic activity become foreign owned. The problem is exacerbated by transfer pricing and the use of multiple foreign currency holdings. Transfer pricing is where goods are traded between sections of the firm located in differing countries at prices which do not relate to the true cost of inputs; this effectively means that profits can be declared in the country which offers the best taxation concessions. Multiple foreign currency funds enable the international corporation to move their holdings of currency from one country to another in order to avoid the losses entailed when a currency is devalued or gains when a currency is revalued, at times of monetary crisis this action may well be critical for national governments.

Economic policies are usually intended to attain, among other things, full employment and a satisfactory external payments position. The multinational firm can cause problems in both these areas. A good example of the former was when in August 1962 General Motors sacked some 685 out of 3,100 workers at their refrigeration works in Genvilliers near Paris claiming that Italian refrigerators were undercutting them and forcing them out of the market; another was when two weeks later Remington-Rand transferred the production of portable typewriters to a new plant in the Netherlands, this resulted in 800 of 1,200 workers at their Caluire et Cuire Plant being dismissed. By rationalising production globally, the MNC does not trade finished products from all plants, but to a large extent trades components of the finished product between plants. Ford, Chrysler, and General Motors are all in the process of rationalising car production at the European level; engines produced at one plant, motor bodies in another, gear and axle assemblies in yet another, these finally being sent to an assembly plant for producing the finished car. Firms who find this type of production to be most efficient are not always going to satisfy a government's desire for a satisfactory balance between imports and exports.

Without a comprehensive industrial policy governments may well be instrumental in aggravating the long term bad effects of the multinational corporation. Among the countries of the EEC, an industrial policy needs to be framed at the Community level; for example, if the Netherlands offers inducements to a multinational firm, such as generous investment grants, the firm may locate in this country while still having tariff-free access to (say) the French market where such generous investment grants may not exist. The Commission of the EEC has made proposals which are intended to deal with these problems; they include:

- (1) Harmonisation of fiscal policies such as corporate taxation, investment grants, etc.
- (2) Enlargement of the European capital market so that European firms have better access to investment funds.
- (3) Harmonisation of standards of products, labour legislation, etc.

It is hoped that such a law would encourage more mergers between European firms to enable them to com-

pete with US multinationals and that all multinationals would be subject to the control of a coherent Community industrial policy. This has not yet however been accepted by the Council of Ministers and certain problems such as the need for restructuring parts of European industry and the relative weakness of European firms in advanced technology industries are still in need of urgent attention.

At the level of an industrial policy a great deal still remains to be done but in certain cases by using the competition clauses of the Rome Treaty the activities of certain multinationals have been curbed. The Westinghouse Corporation's attempt to take over Jeumont-Schneider, the Franco-Belgian electrical firm was delayed and Continental Can are at present having their market power scrutinised by the Commission; several large chemical firms have been fined by the European Court for breaches of the competitive clauses of the Rome Treaty. A better framework of law is needed for supervising the activities of multinational corporations and the Commission's proposals do cover much of the relevant ground.

International corporations locate production to exploit any one of a number of advantages which could be cheaper labour, fewer legal restrictions and an expanding market. For example, in the summer of 1970 the price of semi-conductors in Europe and the US fell dramatically because they were being imported in large quantities from Singapore, Formosa, South Korea and the Phillipines at around a fifth of the price when produced in Europe or the USA. These plants were owned by large US based international corporations who, by rationalising production on a global scale and investing in areas of low labour costs, were able to switch production and reduce costs.

Trades unions find the international firm difficult to deal with. An employer who can switch production between countries is not an easy person to negotiate with. Unions when operating with the traditional national firm, have a fair measure of the employer's strength and his bargaining position but the impact of multinational corporations has forced unions to rethink their strategies.

In a report on their attitude to multinational corporations, the TUC gave examples of the actions of some international corporations when confronted with industrial unrest. Pirelli attempted to circumvent strikes in Italy by importing non-union labour from Greece and Spain; after an industrial dispute, Raytheon's factory in Sicily was closed down; Henry Ford threatened to reduce investment in the UK because of labour disputes. The International Confederation of Free Trades Unions in a submission to a US Congress Committee named IBM, Kodak, United Fruit Company and Firestone Tyre as being particularly bad in their refusal to recognise unions.

While governments are considering action at the Community level leaders of unions are convinced that to be effective action at the international level is essential. They are now operating in some sectors at an international level to counteract the power of the multinational corporation, in particular in chemicals and automobiles. The International Chemical Workers' Federation arranged a co-ordinated bargaining strategy between their French, US, German and Italian affiliates towards St-Gobain the French chemical and glass corporation; after a long period of co-ordinated

bargaining and a nine week strike in the US the outcome was successful from the unions point of view. International committees have been set up to cover specific firms such as Ford, General Motors, General Electric and Westinghouse and moves to international bargaining have been agreed with the Dutch firm Philips Electrical and Swiss owned Brown-Boverie. In some cases help has been given by strong unions in the parent country to workers in subsidiaries located in less developed countries; for example help given by the German Chemical Workers Union (IG Chemie-Papier-Keramik) to the Turkish workers fighting for union recognition at the Hoechst subsidiary in Turkey. However, trade union leaders will be the first to admit that much more needs to be done.

On the assumption that present trends continue, over the next ten years an even larger proportion of total output in western Europe will be provided by international corporations and of these an even larger number will be rationalising their activities to satisfy clearly defined global objectives.

Products having a stable technology and requiring relatively simple labour skills will increasingly be produced in the developing countries in order to exploit the available supply of cheap labour. Japanese firms are already building ships in Formosa and Malaysia and US firms are producing semi-conductors and electronic components in Singapore and the Phillipines. A leading member of the International Autoworkers Council has predicted that in the not too distant future cars will be produced for the European market from plants located in North Africa.

The multinational corporation has developed ahead of changes in the institutional structure of international trade; for example, the formation of the EEC. In view of this they have been able to exploit the advantages arising from these changes more effectively than the traditional national firms of the countries involved in the new groupings. Economically they have transferred capital and skills between countries (Mainly developed economies) but in the process they have procured for

themselves certain of the prerogatives which are traditionally those of the nation state. For example they decide in which country they will pay tax, invest or raise capital.

Neither the histrionic approach which exaggerates the immediate problems nor the complacent approach which refuses to recognise the existence of problems is of much use to the countries of western Europe. Policies must effectively counter the excesses of international corporations and yet encourage the beneficial effects of the transfer of capital and technology between countries. An understanding of the development of industrial organisations is critical to the quality of life in Europe over the next fifty years.

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