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European Free Trade Association

The European Free Trade Association was set up by a Convention signed in Stockholm in January 1960 by Britain, Sweden, Norway, Denmark, Austria, Switzerland and Portugal. The main aim was to abolish customs duties and quotas on industrial goods traded between members. A secondary objective was to negotiate with the European Economic Community to eliminate barriers to trade over a wide area of Europe.

Origins of EFTA

The formation of the EFTA can be seen as a part of the general process of the lowering of national economic barriers which has been going on in Western Europe since the end of the Second World War. Its more immediate origin, however, lay in the failure of the attempt, sponsored by Britain, to create a wider free-trade area between all the members of the Organisation for European Economic Cooperation (OEEC). Negotiations to remove all tariffs and other barriers to trade in industrial goods between the European Coal and Steel Community and the other members of the OEEC were started in October 1957 but collapsed in November 1958. Soon afterwards the governments of the "Outer Seven" (Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom) decided, under pressures from industrialists at home, to explore further the possibility of forming a free trade area among themselves. Their aim was to foster favourable conditions for another attempt to create a single integrated market in Western Europe, and by using the free-trade technique that had been discussed in the OEEC negotiations, they intended to show that it was workable.

In June 1959 officials from the seven countries met near Stockholm to draw up a draft plan and by November the Convention establishing the European Free Trade Association had been agreed by the Ministers to come into force on May 3, 1960.

The Stockholm Convention

Agreement was facilitated by the work that had already gone into the OEEC negotiations and by the readiness of the Seven to adopt a pragmatic approach by seeking to solve specific problems as they arose. Furthermore the prevailing opinion at that time was that Western Europe would not remain divided into two groups for long: EFTA was likened to a waiting room to be used only until a wider economic community was formed. The Convention, therefore, sets out the basic framework

of the Association in the form of guiding principles with only a minimum of detailed rules of operation and procedure, confirming the intention of the EFTA states to continue to work for further cooperation between the members of the OEEC, including members of the EEC.

The objectives of EFTA were then set out as the establishment of a market free of all artificial barriers to trade and the strengthening of the economies of the member states by promoting economic expansion, full employment, higher productivity and the rational use of resources, financial stability and continuous improvement of living standards. These objectives are to be promoted "in the area of the Association and of each member state", emphasising the need to ensure that a satisfactory balance of advantage is maintained between the members and their different economic interests.

EFTA Institutions

- (1) The EFTA Council, consisting of representatives from member states, each of which has one vote, makes all decisions by unanimous vote, implements the Convention and supervises the day-to-day work of the Association. There are ministerial meetings three times per year but weekly meetings at the level of the heads of the permanent delegations to EFTA which all the members have established in Geneva.
- (2) The Secretariat in Geneva.
- (3) The Consultative Committee: an informal advisory body drawn from industry and trade unions which can make suggestions to the Council on EFTA matters.
- (4) The six specialist committees:
 - The Customs Committee: made up of customs officials and concerned with the rules and procedures of the free trade area;
 - Committee of Trade Experts: deals with the technical problems of operating the Convention;
 - The Agricultural Review Committee: undertakes an annual review of EFTA trade in agricultural products;
 - The Economic Committee: enables economic experts to discuss the economic and financial policies of member states;

- The Economic Development Committee: set up in 1963 to promote economic development in the less developed areas of the Association;
- The Budget Committee: controls the finances of the Association.

The Association Agreement with Finland

Mainly for political reasons Finland felt unable to join EFTA as a full member, in spite of strong trading links with the other Scandinavian countries and with Britain, but after short negotiations at Helsinki it was agreed that from June 24, 1961, all the provisions of the Stockholm Convention would apply to Finland-EFTA trade, with only minor adjustments and with a slightly delayed timetable for the elimination of tariffs.

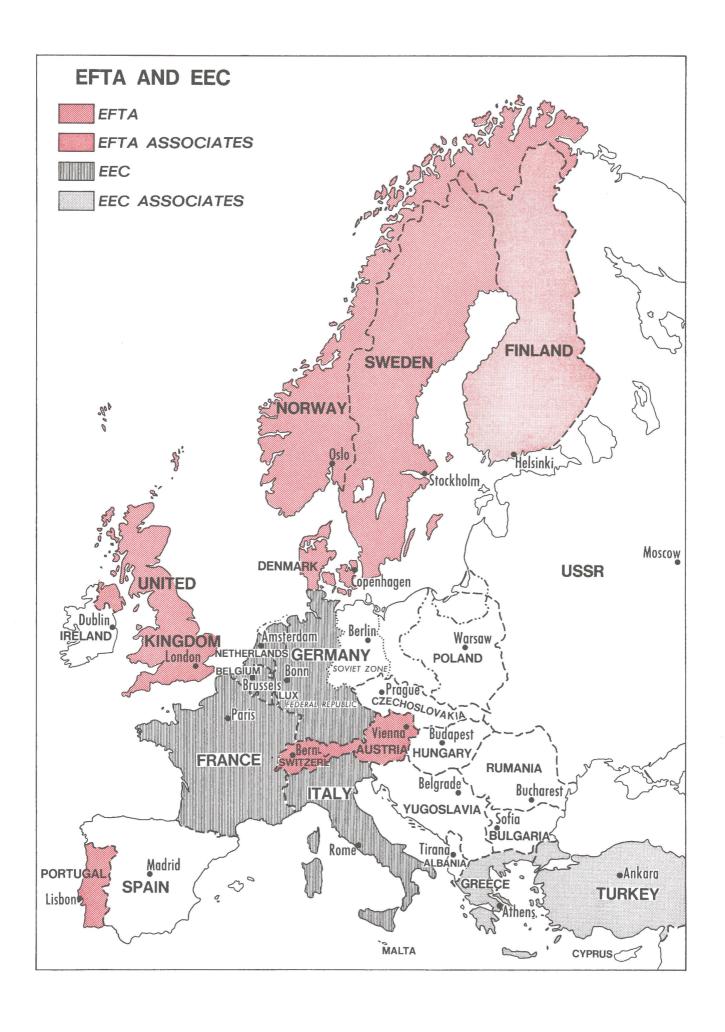
The only organ of the Association between EFTA and Finland is the Joint Council, which operates in parallel with the EFTA Council on almost all issues. To all intents and purposes Finland acts as a full member of EFTA 1.

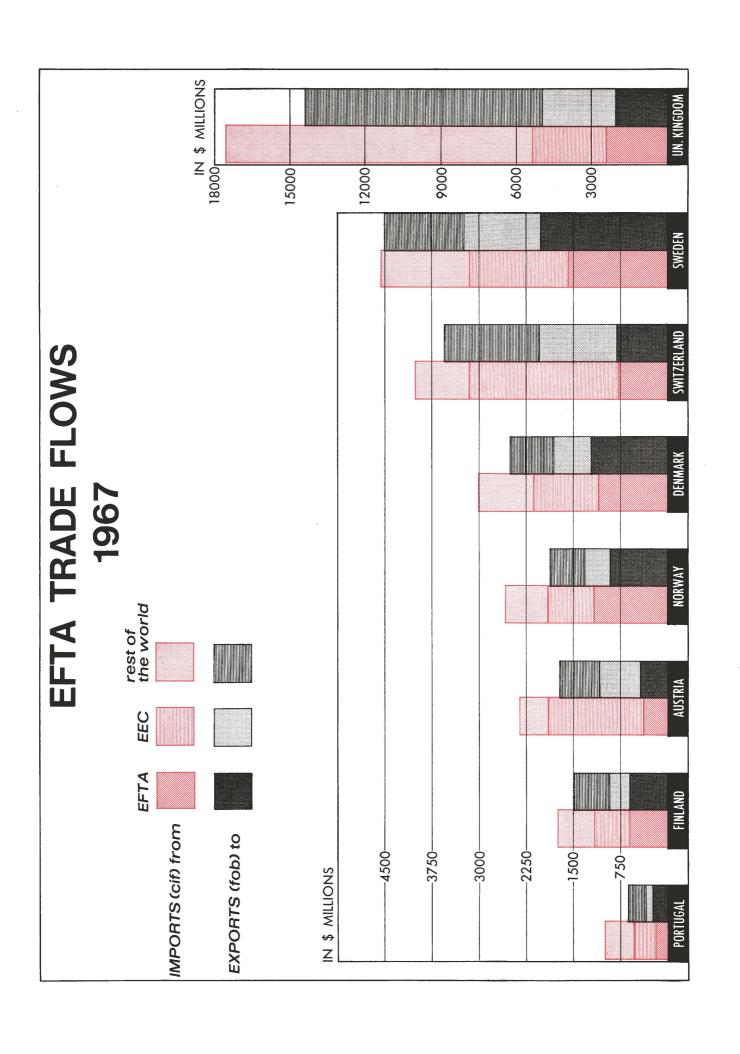
EFTA and non-member countries

Each EFTA country retains full control over its trading policies with non-members, providing they do not conflict with the aims of the Convention: there is no common external tariff around EFTA. During the OEEC negotiations for a European freetrade area the EEC countries doubted whether an effective system of controls could be devised to prevent imports into the area from third countries from being deflected through the country with the lowest tariff against ousiders, once the free movement of goods within the area had been achieved. The system introduced by EFTA has proved successful and works smoothly. According to the Convention, goods are regarded as eligible for EFTA tariff treatment provided they pass in trade between two member states and satisfy one of the following criteria:

- they have been wholly produced in EFTA;
- they have been subject while in EFTA to a specified production process;
- the value of any materials used in the production imported from outside EFTA must not exceed 50 per cent of the export value.

¹ In January 1969 Iceland asked for membership of EFTA. Forty per cent of her trade is already with EFTA members but she is seeking to widen her economic base which at present is built on her fisheries. Difficulties are: (1) EFTA countries would have to agree to a continuance of her agreements with Russia whereby she obtains all her oil and petrol requirements from her in return for a guaranteed market for frozen fish and salt herring (Finland's existing agreements with Russia were allowed to stand in 1961), (2) Iceland would want free trade in fish (at present only partly covered by the Stockholm Convention, (3) Iceland would need ten years for its own tariff dismantling for they are rather high and revenue-raising rather than protective in character (Portugal was given twenty years).





Indirect barriers to trade

The abolition of tariffs and quotas on trade do not by themselves create a completely free market: indirect barriers to the free movement of goods may be equally effective in protecting national producers and frustrating the benefits to be achieved from the elimination of tariffs and quotas. The Convention includes provisions to cover trading practices by public authorities which favour national producers, government assistance to exporters, dumping legislation, and restrictive business practices. These provisions are difficult to interpret but some progress has been made in EFTA through the investigations of various working parties. Now that tariffs and quotas have been almost eliminated these non-tariff barriers will receive even greater attention.

Other articles of the Convention provide for special problems associated with the removal of tariffs, such as balance of payment difficulties and national security.

Negotiations between EFTA members and the EEC (1961-1963)

The first year of operation of EFTA was principally concerned with implementing the initial stages of trade liberalisation: the first 20 % reduction in tariffs came into effect on July 1, 1960. At the same time various overtures were made to the EEC in an attempt to prevent trade discrimination developing between the two trading bodies as internal tariffs were dismantled, but these were abortive. In the middle of 1961 the British Government announced that it wished to open negotiations with a view to joining the EEC, subject to satisfactory arrangements to meet the special needs of the United Kingdom, the Commonwealth and her EFTA partners. This was followed by similar approaches by the other EFTA countries for full or associate membership under the Treaty of Rome and the centre of EFTA activities shifted from Geneva to Brussels, where it remained until the negotiations with the UK were terminated by the French veto in January 1963. Then the EFTA countries returned to their own organisation with renewed vigour: the government delegations and the Secretariat in Geneva were restaffed and an EFTA Ministerial Council called for a review of the Association's progress with a view to taking steps to strengthen it.

The Ministerial Council held in Lisbon (May 1963)

Although the original proposals in the OEEC had been for free trade in industrial goods only, in order to satisfy the balance of interests certain arrangements had been included in the Stockholm

Convention for trade in agricultural and fish products even though they are outside the general pattern of tariff dismantling. These special arrangements were extended in Lisbon where the timetable for the reduction of tariffs on industrial goods was shortened to bring total removal by 1967 instead of by 1970. In return there was an agreement to introduce measures to promote trade in agricultural produce including an annual review of agricultural trade in EFTA. In addition an Economic Development Council was set up, primarily with the intention of assisting the development of certain Portugese industries. A work programme was undertaken to examine the indirect barriers to trade mentioned above.

Britain's economic difficulties October 1964

In October 1964 EFTA suffered its first major internal crisis when the British Government imposed a 15 % temporary surcharge on all imports of manufactures, for balance of payments reasons. This step, taken without prior consultation with EFTA partners, was in direct contravention of the Convention. It met strong criticism from those partners and caused a crisis of confidence in the Association which led to the setting up of an Economic Committee to act as a watchdog over economic developments in EFTA and to provide a forum for discussion of similar economic difficulties on any future occasion. Under strong pressure the British Government soon reduced the surcharge to 10 %, although it was not finally removed until November 1966.

Negotiations between EFTA members and the EEC 1965-1967

For two years after the breakdown of the Brussels negotiations in January 1963 there were no new approaches to the EEC but efforts were made to reduce trade barriers between EFTA and the EEC by the Kennedy Round tariff negotiations in GATT. In the spring of 1965 new efforts were made at "bridge-building", attempts to develop common policies on technical matters such as patents law and industrial standards but without success.

In November 1966 events took a new turn. The British Government began to explore again the possibilities of joining the EEC and in the summer of 1967 Britain, followed by Norway and Denmark, made formal application for membership. The neutral countries in EFTA made no application. In September the EEC Commission reported that in spite of difficulties which would arise in negotiations, it favoured the enlargement of the Community. In November however the French Government made plain its opposition and another phase in the relations between the EEC and the EFTA ended.

EFTA trade 1959-1968

Trade between EFTA member countries (in million of \$)

		Imports from	EFTA f.o.b.			Exports to I	FTA f.o.b.	
	1967	1959-1967 % p.a.	1968	1967-1968 % changes	1967 \$	1959-1967 % p.a.	1968 \$	1967-1968 % changes
Austria	403	15.6	444	+10.4	407	16.9	471	+15.9
Denmark	1,160	10.7	1,197	+ 3.4	1,253	10.2	1,291	+ 3.3
Finland	582	11.9	574	- 1.2	580	11.0	642	+13.2
Norway	1,194	11.9	1,128	- 5.3	816	12.1	880	+ 7.8
Portugal	235	11.2	257	+ 9.5	243	20.5	246	+ 9.1
Sweden	1,591	13.0	1,741	+ 9.8	1,981	11.7	2,145	+ 8.3
Switzerland	685	12.9	744	+ 8.8	759	13.4	842	+11.2
UK	2,347	8.6	2,553	+10.0	2,157	8.6	2,121	— 1.5
Total EFTA	8,196	11.1	8,638	+ 5.9	8,196	11.1	8,638	+ 5.9

Source: EFTA Bulletins, Vol. IX, No. 3, 1968; Vol. X, No. 3, 1969.

Commercially EFTA has been a success: in the period 1959-1968 trade between member countries has increased by an annual average of 10.5 % and in 1968 is at a level two and half times what it was before the Stockholm Convention.

The EFTA trade flows for 1967 (see diagram) reflect the geographical position of the countries, traditional trade ties with certain overseas territories but chiefly the importance of the EFTA links.

Within EFTA, trade between Britain and the Scandinavian countries is by far the most important intra-area flow, accounting for 40 %, but trade between the four Scandinavian countries is now 30 % of intra-area trade and is growing at an annual average rate of 14 %.

As might be expected Austria and Switzerland have more trade with the EEC than with EFTA countries although Austrian trade with the former grew by only 7.5 % against a growth of 12.5 % with the latter in 1968. Portugal exports twice as much to EFTA as to the EEC but her imports from the EEC exceed her imports from EFTA by 33 %. Altogether in 1968 the EEC accounted for a third of the total EFTA imports and a quarter of the exports: these very strong trade ties call for some arrangement between the two organisations.

The future of EFTA

EFTA was founded in 1960 not only with the objective of creating a free-trade area, but equally to make a wider West European solution easier to achieve. It has produced a single market of 100 million people free of tariffs on industrial goods and on

some agricultural goods, and freed from many other barriers to trade. The trade benefits have been considerable but the effectiveness of the organisation can be extended. The new programme of work approved by EFTA Ministers in London in May 1968 is directed to this end with three main aims: firstly to examine "rules of origin" to see if changes could be made which would stimulate trade; secondly to revise the rules of competition as they are affected by restrictive business practices, government aid and procurement policies of public undertakings; and finally to provide for closer consultation on subjects of joint interest between member countries

It is clear, nonetheless, that the EFTA countries while tightening economic co-operation among themselves will continue to prepare for their eventual participation in a wider community in Europe. The EFTA ministers in London reaffirmed their "continuing determination to work for the wider integration of Europe which has always been the objective of EFTA".

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The Court of Justice of the European Communities

The establishment of the three European Communities by Belgium, France, Germany, Italy, Luxembourg and the Netherlands has brought into existence a new body of law, the law of the European Communities. The primary sources of that law are the treaties which established the Communities: the Treaty of Paris, 1951 which set up the European Coal and Steel Community (ECSC) and the two Treaties of Rome, 1957 which set up the European Economic Community (EEC) and the European Atomic Energy Community (Euratom). Those treaties lay down principles and rules which are designed to regulate the economic life of the six member countries in a uniform fashion.

The progressive application of those principles and rules necessarily raises a wide variety of legal problems. The founders of the Communities therefore included a Court of Justice among the organs of the Communities to act as the final arbiter in the solution of such problems. The Court was first set up in 1952 to serve the ECSC. In 1958 its competence was extended by the two Treaties of Rome to serve also the EEC and Euratom. The Court of Justice exists not merely as a means of settling disputes which may arise concerning the Treaties, but as a means of ensuring that such disputes are settled in a consistent way, compatible with the aims of the Communities.

Composition

The Court of Justice of the European Communities sits in Luxembourg. It consists of seven judges appointed by mutual agreement between the Governments of the member countries. The judges must be persons of indisputable independence who are either qualified to be appointed to the highest judicial offices in their respective countries or who are lawyers of outstanding ability. They hold office for six year terms and are eligible for re-appointment. The judges elect the President of the Court from among themselves for a term of three years.

The Court appoints its Registrar for a term of six years.

The Court is assisted in its work by two Advocates-General who are also appointed for six years terms by a joint decision of the Governments of the member countries. The Advocates-General must satisfy the same professional qualifications as the judges. The task of the Advocates-General is to present publicly, and with complete independence and impartiality, reasoned conclusions on cases before the Court so as to assist the latter in the performance of its duties. The Advocates-General represent neither the Communities nor the public; they function only in the interests of justice in the context of the three Treaties.

Procedure

The President directs the work of the Court and presides both at public sessions of the full court and at its deliberations in private. The Court normally sits in two chambers each composed of three judges assisted by one Advocate-General. Proceedings before the Court go through a number of stages.

As soon as a petition has been filed with the Court the President assigns the case to one of the Chambers and appoints one of the judges as "reporting-judge" (juge-rapporteur) whose task it is to prepare a preliminary report on the case for the consideration of the Court. In a petition the plaintiff will outline his claim against the defendant and the grounds on which it is made. The defendant will then be notified of the petition and will be given the period of one month within which to prepare and submit to the Court a statement of defence. The plaintiff may make a written reply to the defence and the defendant may also then make a further statement. This exchange of written submissions by the parties constitutes the first stage in the Court's procedure.

The "reporting-judge" then reports to the Court which will decide whether it is necessary to make a further investigation into the submissions of the parties. The Court will also hear the views of the Advocate-General on this point. If the Court decides that a further investigation should be made then this will take the form of the appearance of the parties and their witnesses before the Court for oral cross-examination and the inspection of documentary evidence. This investigation is not conducted by the lawyers representing the parties, but, following continental practice, it is carried out by the Court itself

After the investigation has been completed, or, if there has been no investigation, at the end of the written submissions, the oral proceedings take place. This stage begins with a report by the "reportingjudge" who will outline the case, summarise the arguments of the parties and make a statement on the facts of the case on the basis of the evidence which has been presented to the Court in the course of the written submissions and investigation stages. This report will be followed by oral argument on behalf of the parties who must be represented by agents or advocates. There is no hearing of witnesses or cross-examination at this stage. The oral proceedings conclude with the submissions of the Advocate-General.

At the conclusion of the oral proceedings the judges withdraw to deliberate in private. The Court may re-open the oral proceedings at this stage if it so wishes. The judges' deliberations finally result in the judgement which is delivered in open court. The judgement will consist of the majority opinion of the judges and no dissenting opinions are published. The Court's judgements have binding force in the member countries from the date of their delivery and are enforceable by the national courts of the member countries.

The official languages of the Court are the official languages of the communities, namely, German, French, Italian and Dutch. All documents submitted to the Court must be translated into these four languages. But, only one of the official languages may be used as the procedural language in a given case before the Court. The basic rule is that the choice of the procedural language is made by the plaintiff. But if the defendant is one of the member countries then the procedural language must be the language of that country.

Finally, the Court publishes in each of the official languages reports of its judgements (Recueil de la Jurisprudence de la Cour). All the Court's judgements are printed in this Recueil together with the submissions of the Advocates-General. Over 300 cases are reported in the first eleven volumes of the Recueil which cover the years 1953-1965.

Jurisdiction

1. Disputes concerning the implementation of the Community Treaties

The Court has an exclusive and compulsory jurisdiction over all disputes between member countries concerning the implementation and interpretation of the Community Treaties.

It also has jurisdiction to settle disputes between the member countries and the organs responsible for the administration of the Communities, namely, the common Commission of the European Communities (which since July, 1967 has replaced the ECSC High Authority and the ECC and Euratom Commissions) and the Council of Ministers of the Communities.

In the case of a dispute between a member country and a Community organ the form of legal action

which may be taken will depend on the terms of the Treaty involved. If, in the context of the ECSC Treaty, the Commission considers that a member country has infringed certain provisions of the Treaty it makes a reasoned pronouncement to that effect which will oblige the country concerned to take the measures necessary to comply with the Treaty. But if that country believes that its own interpretation of its obligations under the Treaty is correct then it may appeal to the Court of Justice against the decision of the Commission. When the same sort of dispute arises in the context of the EEC. Treaty however, it is the Commission which has the power to bring proceedings before the Court alleging that a given member country is not complying with a particular decision.

Case example

This case concerned the elimination of customs duties between the member states, which is one of the chief objectives of the EEC.

The case centred around a provision of the EEC Treaty to the effect that the member countries shall not introduce, as between themselves, any new customs duties on imports or exports "or any charges with equivalent effect". The case concerned Belgium and Luxembourg both of whom instituted, before the establishment of the EEC, a special tax levied on the granting of licenses to import gingerbread (pain d'épice). In 1960, after the establishment of the EEC, this tax was increased and extended to other similar products. The former EEC Commission regarded this tax as a "charge with equivalent effect" to a customs duty and as such contrary to the provision in the EEC Treaty concerning the elimination of customs duties. When the Governments of Belgium and Luxembourg failed to comply with a request to reverse their decision to increase and extend the tax, the Commission referred the matter to the Court of Justice of the Communities in order to establish whether there had been a breach of the Treaty. The Court decided that this tax did have an effect equivalent to that of a customs duty since the tax was levied only on imported gingerbread and not on gingerbread produced in Belgium or Luxembourg. Thus the Governments of those countries were obliged to cancel the increase in the tax and its extansion to other products.

The Court is also empowered to review the legality of the administrative acts of the organs of the Communities. In addition it is possible in this context for the Court to entertain proceedings alleging inactivity on the part of an organ of the Communities in circumstances in which the Treaties require positive action to be taken by that organ. This aspect of the Court's jurisdiction may be invoked on any of a number of grounds. The first is on the ground of legal incompetence, that is where an organ of the Communities attempts to use powers which have not been conferred upon it by the Treaties. Secondly, where there has been a serious

violation of the rules of procedure by an organ of the Communities, such as a failure to comply with the rules concerning the number of votes necessary to make certain decisions. Thirdly, an administrative act may be challenged on the ground that it is based on an improper interpretation of the Treaties. Lastly, the validity of an administrative act may be contested on the ground of "abuse of power" (détournement de pouvoir). This is a concept, largely borrowed from French law, which is applied to a situation in which an organ of the Communities has used its power for an improper purpose, that is to say for some purpose not envisaged in the Treaty provision conferring that power. It is clearly important that organs of the Communities which have the power to make rules which are directly applicable to the citizens of the member countries should be subject to the supervision of the Court of Justice.

Actions questioning the legality of administrative acts may be brought by the Governments of the member countries, by the organs of the Communities and, in certain cases, by private individuals and corporations. If the Court of justice considers any such action well founded it will declare the administrative act in question to be null and void and the organ of the Communities which is responsible will be required to take steps to comply with the Court's decision.

2. Actions by individuals and corporations

In certain cases the Treaties give individuals and corporations the right to bring actions before the Court of Justice of the Communities. Corporations engaged in the coal or steel industries who are subject to the ECSC Treaty may bring actions before the Court in respect of decisions which are directed to them individually. They may also bring actions in respect of decisions which relate to those industries generally where the plaintiff corporation alleges that the decision involves an "abuse of power" which is to the plaintiff's detriment. The EEC and Euratom Treaties confer a right of action on private individuals and corporations against any decisions which is addressed to them or which, although not addressed to them, affects them directly and individually.

In addition the Court has laid it down that private individuals enjoy a right of action before the courts of the member countries wherever the Treaties or the decisions of the organs of the Communities confer rights directly upon private individuals. An example of such a right concerns the elimination of customs barriers. When the EEC Treaty prohibits member countries from raising the customs duties which are levied at the internal frontiers of the Community, any member state which ignores this prohibition is liable to have an action brought against it by one of its citizens before the courts of that country.

Case examples

The first case concerned corporations. It involved 23 companies who applied to the German Government for licences to import a large quantity of maize into Germany. The German Government refused to grant the licences by virtue of powers conferred upon it by the EEC rules regulating trade in cereals. The former EEC Commission subsequently authorized this action by the German Government. Two of the companies then instituted proceedings before the Court of Justice requesting the annulment of the Commission's decision on the ground that the conditions which are necessary in order to enable the Commission to make such a decision were not present in this case. The companies brought the action by virtue of the provision in the EEC Treaty permitting private individuals or corporations to challenge a decision not specifically addressed to them provided that the decision is of direct and individual concern to them. Before the Court is was submitted on behalf of the Commission and by the Advocate-General that this particular decision was not addressed to the plaintiff companies but to the German Government nor did it affect them individually since it was applicable to all persons who applied for such import licences and not merely to the two plaintiffs. The Court, however, rejected the views of the Commission and the Advocate-General and decided that the decision in question clearly affected the plaintiffs directly and individually in that it resulted in the refusal of their applications for import licences. Therefore the plaintiffs had the right to bring the action. On the question of the validity of the Commission's decision the Court upheld the arguments of the plaintiffs and declared the decision null and void. Thus the Court recognized the admissibility of an action by a corporation against a decision addressed to a member country.

The second example, concerning individual, is the case, heard in 1966, of a Dutch miner's widow who moved to Germany after her husband's death and was informed by the Dutch miner's insurance fund that she was no longer eligible for a pension. The Community Court ruled that the pension had still to be paid, and also that the widow was entitled to the refund of expenses incurred for medical care.

The Court of Justice of the Communities is also competent to deal with cases in which compensation is claimed in respect of damage caused by the organs of the Communities or the staff of such organs in the performance of their official duties. Disputes between the Communities and their employees concerning their terms of service and conditions of employment are also settled by the Court.

3. The Court of Justice of the Communities and the Courts of the Member Countries

Membership of the European Communities imposes certain legal obligations on member countries. These obligations are designed to ensure that the laws of the member countries are compatible with the law of the Communities and that that law shall be interpreted and applied in a consistent and uniform manner in each of the member countries. Thus it is a basic legal principle of the Communities that in the event of a clash between the law of the Communities and the law of one of the member countries it will be the law of the Communities which will prevail. The guarantee of this doctrine of the superiority of the law of the Communities is provided by the Communities' Court of Justice.

The Treaties provide that when, in the course of a case before a court in one of the member countries, a question concerning the law of the Communities arises then it is for the Court of Justice of the Communities to give a ruling on that question. In such a case the Court may suspend its proceedings and request a ruling from the Communities' Court. If the court in question is the final court of appeal in a member country then it is obliged to place such a request before the Communities' Court; recourse to the Communities' Court is optional in the case of interior courts in the member countries. 58 such requests were placed before the Court up to the end of 1968.

When such a request is addressed to the Court of Justice of the Communities it is simply a request for an authoritative interpretation of the point of Community law in issue. It remains for the court which made the request to settle the case before it by applying Community law as it has been interpreted by the Communities' Court.

The competence to interpret the law of the Communities in this way enhances the position of the Court of Justice as the guardian of that law by providing a safeguard against divergent interpretations of the law of the Communities by all the various courts of the member countries. Thus the uniform interpretation and application of the law of the Communities is further guaranteed.

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Living standards in the Common Market

The decade since the European Community came into being in 1958 has seen rapid economic growth within, and rapid growth of trade between, the countries of the industrialised Western world. Consequently, living standards have increased steadily, and in some cases dramatically. Some of the most notable cases of rapid growth and rising standards have been in the countries of the European Community. To what extent this has been due to the existence of the Community it is difficult to say. The social provisions of the Rome Treaty have not really had time to have any major effect. The Community's main contribution is probably that, by helping to create conditions in which economic expansion has continued at a higher level and for a longer period than in most other Western countries, it has contributed indirectly towards the fast-growing prosperity of its citizens.

Precise comparisons of living standards from one country to another are difficult. In the first place, it is necessary to average out income levels in each country, and the average may conceal major variations in individual incomes. Secondly, comparisons have to be made in terms of a chosen currency and the rate of exchange may distort the picture. For example, the devaluation of the pound sterling in 1967 immediately cut British incomes by 15 per cent in terms of most other currencies, whereas British real incomes would not be affected until later (through increased costs of imports, etc.). Thirdly, differing price levels must be taken into account as well as income levels, and also differing levels of direct and indirect taxation and fringe benefits. Finally, differing tastes can make comparison difficult: what is a staple foodstuff in one country (pasta in Italy, for example) may hardly appear in the normal household budget in another country. Nevertheless, it is possible to obtain a reasonably accurate picture of living standards in Western Europe by looking at average incomes, price levels, trends in consumption and social welfare.

The value of money

Wages

In recent years average wages in the six Community countries have risen sharply. Between 1958 and 1967 average hourly gross wages about doubled in Germany, Italy and the Netherlands and rose by 83 per cent in France, 70 per cent in Belgium and 61 per cent in Luxembourg, as compared with 51 per cent in Britain and 34 per cent in the USA.

The figures for average annual incomes follow the same pattern and show that while in 1958 Belgium, France and Luxembourg had higher average incomes than Britain, by 1966 only Italy was lower than Britain (Table 1).

The more rapid growth of wages in the Community than in Britain is explained in part by the fact that some countries, notably Italy and the Netherlands, had lower income levels in 1958, but probably more important is the fact that for a variety of reasons economic expansion has been much faster. Thus over the ten years from 1958-1967 industrial production increased by 70 per cent in the Six (32 per cent in Britain and 73 per cent in the USA). Community imports by volume increased by 140 per cent (Britain 57 per cent, USA 94 per cent) and exports by 139 per cent (Britain 32 per cent, USA 65 per cent). This much more rapid increase in economic activity permitted wages to rise relatively quickly without leading to inflation to the same degree as in Britain, though of course prices have risen.

These figures do not of course take into account different levels of "fringe benefits" (paid holidays, annual bonuses, social security benefits, etc.) which are particularly high in France and Italy (see below), nor of income tax paid on gross wages in different countries. A detailed survey of 43,000 families in the six countries undertaken in 1963/1964 revealed that compulsory social security payments and direct taxes took the following percentage of wage- and salary-earners' gross incomes: Belgium 10.6 per cent; France 5.8; Germany 15.2; Italy 7.8; Luxembourg 10.9; Netherlands 18.8. The figure for the United Kingdom in 1964 was about 12.6 per cent, though it should be noted that since that date the figures have tended to increased in most countries.

Prices

The simple comparison of income figures also takes no account of the purchasing power of money earned, which has declined in all countries as prices increase. In a full common market and economic union prices would be broadly similar throughout the whole area, except perhaps for variations caused by differing transport costs. But the European Community is some way from this and price levels vary considerably. In the first place, only in July 1968 were final customs duties on trade between the Six abolished, and the common external tariff fully implemented. Secondly, price differences are still caused by excise duties and sales taxes levied at different rates in different countries. And thirdly, market conditions differ considerably so that, for example, manufacturers' and middle-men's markups, storage charges and other costs may vary appreci-

The field in which prices are strikingly higher in the Community countries than in Britain is that of food. The British Ministry of Agriculture, Food and Fisheries has estimated that the cost of food is about 14 per cent higher in the Six where common farm prices now exist for most products. (Table 2.) This average figure hides even wider variations, ranging from butter at one extreme, which in the Community costs roughly double the British price, to many fruits and vegetables which for reasons of climate can be produced much more cheaply in France or Italy. The reason why so many food products, in particular butter and cerealbased foods, are cheaper in Britain is partly because of the relative efficiency of British farming. But even the British farmer cannot compete with farmers in countries like Canada, Argentine and Australia, and the British government therefore provides them with a degree of protection through the deficiency-payment system. Or,

Despite the higher food prices, it would seem in general that living standards in the Community have risen rapidly and are now at least equal to that in Britain, and in some cases higher. It is clear that wages have in all countries increased faster than prices. The Commission of the European Communities has estimated that workers' real incomes, taking all these various factors into account, rose between 1958 and 1967 by 60 per cent in Italy, by 50 per cent in Germany, France and the Netherlands, by 40 per cent in Belgium and by 30 per cent in Luxembourg. As the last two countries were the most prosperous of the Six in 1958, this trend indicates a narrowing of the gap within the Community.

Social security

Social security benefits play a significant part in maintaining living standards in all six Community countries, but levels of benefit vary greatly, as do levels of contribution and the schemes under which social security is administered. Each country has a compulsory "general" system for wage- and salary-earners (sometimes up to a certain level of income) in respect of all the benefits provided for in the International Labour Office's Convention No. 102. This covers medical care and sickness benefit, maternity, disablement, old age, death, employment injuries and occupational diseases, unemployment, and family allowances 2. There are commonly also special schemes for particular occupations, such as mining; and broad groups of self-employed persons, especially farmers and artisans, are frequently also subject to compulsory, though separate, schemes for all or most benefits. In some countries, however, some benefits cover the whole population-for example, old age pensions in the Netherlands.

Social security in all six countries is based mainly on the insurance principle, and relies relatively little on finance from taxation (table 3); both contributions and benefits are in most cases related to earnings, and are frequently higher than in Britain. The employer usually pays by far the largest proportion, especially in France and Italy. Finally, the administrative structure is often complex, with a large variety of public and semi-public bodies responsible for different aspects of social security.

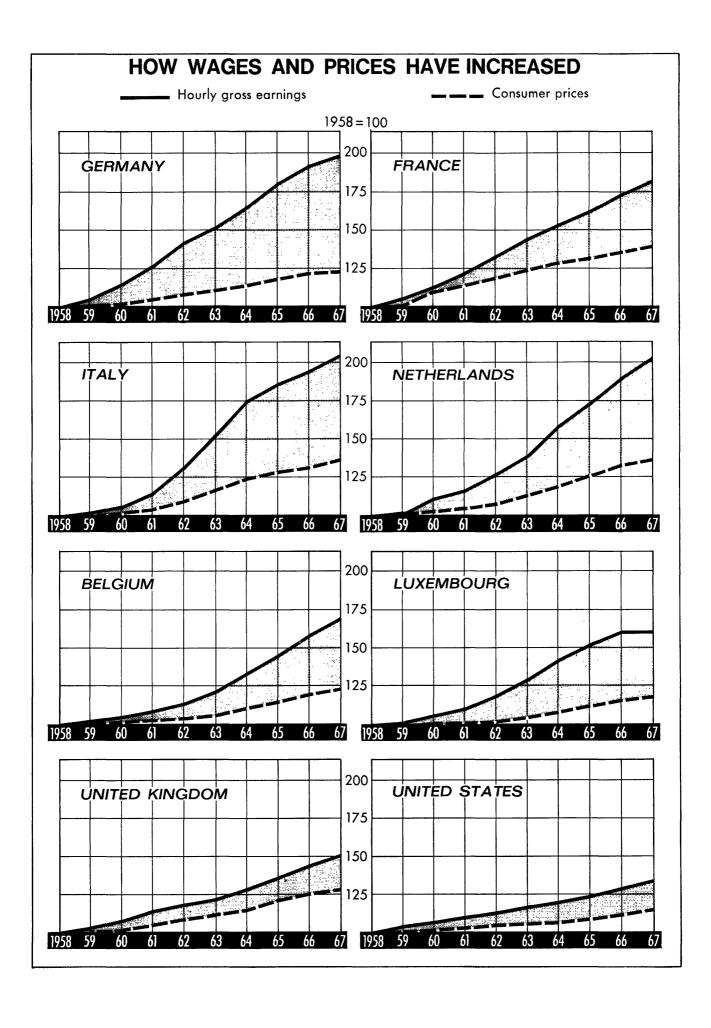
In Britain social security has been regarded more as a charge on society which must guarantee every citizen a minimum level of subsistence. This explains why the British system is a universal and uniform one, based on flat-rate and relatively low benefits, and why a major part is played by the State in financing the scheme. The system leaves room for—and indeed encourages—the higher income earners to participate also in private and occupational schemes. But the situation is slowly changing. The "graduated pensions scheme", which

put another way, this government subsidy permits home-produced food to be sold at less than an economic price, thus keeping down the direct cost to the house-wife.

Despite the higher food prices it would seem in

² The British system covers the same risks, with the exception of partial disablement unless caused by industrial accident or disease.

¹ Before sterling devaluation.



Living standards in the Common Market (statistical annex)

Table 1

Wages and prices

	hourly manuf inc (inc	ge gross wage in facturing lustry luding ee) March/		age annual inc and salary-ea (£)		Hourly gross wages index (3)	Consumer price index (3)	a It should be noted that these average figures show a greater disparity between men's and women's wages than would apply to individual jobs, since women normally work shorter hours (less overtime) than men, benefit less from length of service increments (because working life frequently interrupted for family
	Men s. d.	Womena s. d.	1958	1966	% change	1967 (19	58 = 100)	reasons) and in many industries customarily do less skilled work. Nevertheless, though women's wages have risen more rapidly than men's in all countries listed over recent years.
Belgium	7.10	5.4	645	1,082	+ 68	170	123	in none of them has equal pay been fully implemented.
France	6.8	4.9	616	1,180	+ 92	183	140	b Men and women.
Germany	8.10	6.2	510	993	+ 94	199	123	c 1960.
Italy	5.5	4.0	388	831	+118	206	137	d 1964.
Luxembourg	9.10	5.7	862 c	$1,138^{d}$	+ 32 e	161	118	e 4 year period only. Sources:
Netherlands	7.2	4.3	513	1,077	+110	203	137	(1) Statistical Studies and Surveys. No. 3. 1968, ECSO. Annual Abstract of Statistics,
UK	9.4	5.5	603	925	+ 53	151	129	CSO. (2) National Accounts 1957-1966, ECSO.
USA	20.3 b		1,572	2,175	+ 38	134	115	(3) General Statistical Bulletin, No. 12, 1968, ECSO.

Table 2

Retail food prices.a August 1966

	Brad per Ib. d.	Butter per lb. s.d.	Margarine per lb. s.d.	Lard per lb. s.d.	Eggs per doz. s.d.	Milk per pint d.	Sugar per lb. d.	Beef b per lb. s.d.	Pork per lb. s.d.
Belgium France Germany Italy Netherlands	8.3 7.8 11.5 11.5 8.2	7.8. 6.7. 6.4. 7.3. 5.2.	2.4. 2.4. 2.2. — 1.6.	2.0. 2.5. 2.1. 2.4.	5.7. 4.8. 4.4. 5.4. 3.4.	8.6 7.5 8.3 9.6 6.9	17.8 10.4 12.1 14.9 12.6	11.5. 9.8. 8.0. 9.10. 10.9.	7.10. 5.6. 7.0. 8.6. .6.6.
UK	8.9	3.5.	2.0.	1.6.	3.71/2	9.5	8.5	7.4.	5.6.

a Not allowing for possible quality variations.
 b UK: sirloin without bone; Community: "beef-stcak".

Source: Ministry of Agriculture, Food and Fisheries, London.

Table 3

Financing social security

		Sources of fin	ance 1966 (%)	
	Employer	Employee	State	Other a
Belgium France Germany Italy Luxembourg Netherlands	48 68 37 62 41 39	24 20 37 15 27 47	22 7 22 18 21 7	6 5 4 5 11 7
UK ^b	27	20	48	5

a Mainly interest on invested funds.
 b UK figures for 1966/1967.

Source: Exposé sur la situation sociale dans la Communauté en 1968, Commission of the European Communities.

Table 4 Average hours worked in industry, including overtime

October 1967 (in hours and decimal points)

_		_
	Manufacturing industries	Manufacturing and other industries
Germany Belgium France Italy Luxembourg Netherlands	42¾ 43¾ 45¾ 44¾ 44 44	43 43 ³ / ₄ 46 ³ / ₄ 44 ¹ / ₂ 45 ³ / ₄
UK a	45½	46 1

a EEC: all workers. UK: men workers aged 21 or Source: Statistical Studies and Surveys, No. 4, 1968, ECSO.

Table 5 Paid holidays. Situation in early 1966

	Workers	Legal minimum (in days)	Minimum laid down by collective agreement	Public holidays	Total	
Belgium	To age 18 Adults	18 a 12 a	18 18	10 10	28 a 22-28 a	
France	To age 18 Adults	24 18	24 24	9 <i>b</i> 9 <i>b</i>	32 b 32 b	7 No. 10 to 1 and 1 and 1
Germany	To age 18 Adults	24 15–18	24 ^c 15–24 ^c	10–13 10–13	34–37 c 25–37 c	 a Plus 12 days' pay as bonus. b Plus 10 days (usually paid) for women and adolescents. c Plus bonus in some industries (approximately 1/3 of
Italy	To age 18 Adults		12–30 12–30	17 17	29-47 29-47	work force receive on average 9 DM per day holiday), d Plus two weeks' pay as bonus. Source: La réglementation des congés payés, Collection
Luxembourg	To age 18 Adults	24 18–24	_	10 10	34 28–34	Etudes, Série politique sociale, No. 18, 1967. Commission of the European Communities.
Netherlands	To age 18 Adults	18–23 18	· _ d	6–7 6–7	24–30 ^d 24–35 ^d	
UK	To age 18 Adults	_	10–15	5–6	15–21	

Composition of private consumption (1966)

Percentage of total private expenditure devoted to:

	Food, drink, tobacco	Rent, fuel, lighting	Clothing, footwear	Furniture household goods repairs	Transport	Education recreation	
Belgium	33	16	9	12	9	4	
France	37	11	11	8	9	6	
Germany	34	15	12	13	9	8	
Italy	47	13	9	6	9	6	
Luxembourg	35	16			9		•
Netherlands ^a	35	13	11	16	4	4	
EEC	37	13	11	10	9	6	a 1965.
	<u> </u>	l		1	<u> </u>	!	Samuel Saladal Elama 1000 ECCO R
UK a	39	15	11	7	12	7	Sources: Selected Figures, 1968, ECSO. Basic Statistics of the Community, 1967, ECSO.
USA a	25	18	9	7	15	5	,,,

Table 7 Consumer durables Numbers per 1,000 population

	Cars (1.1.1967)	TV sets (1.1.1967)	Telephones (1.1.1966)
Belgium France Germany Italy Luxembourg Netherlands	161	166	164
	198	150	124
	178	212	147
	121	130	115
	199	109	239
	128	189	189
EEC	163	170	136
UK	172	256	193
USA	397 ^a	408 ^a	475

a January 1. 1966:

Source: Basic Statistics of the Community, 1967, ECSO.

Table 8 Newspaper readership Daily newspapers, 1965

	No. of newspapers	Est. total circulation (1,000)	Total circulation per 1,000 pop.
Belgium	54	2,701	285
France	121	12,041	246
Germany	411	19,264	326
Italy	92	5,811	113
Luxembourg	7	158	477
Netherlands	88	3,598	293
UK	110	26,100	479

Table 9 Housing

	د	Dwellings cor	mpleted, 1967 (1)		Fa	acilities in dwellin	gs, 1960, 61, 62 (2) ^a
,		Per 1 000	Subsidised	dwellings	Rooms per	D	% of dwell	lings with
·	Total (1 000)	population	Total (1 000)	% of all dwellings	dwellings	Persons per room	Running water	Bathroom
Belgium	47	4.9	21	45	4.8	0.6	77	24
France	422	8.5	329	78	3.1	1.0	78	28
Germany	572	9.6	174	30	4.0	0.9	97	49
Italy	267	5.0	26	10	3.3	1.2	61	29
Luxembourg	1.8	5.4	0.7	37	5.1	0.6	99	46
Netherlands	127	10.2	96	75	5.2	0.8	90	59 c
EEC	1,438	7.8	647	45				•
UK USA e	415 1,542	7.4 7.1	198 38	48	4.7 5.0	0.7 0.7	90 b 93	78 ^d 88

a More recent figures not available since these statistics are normally collected only as part of a ten-yearly census.

b Estimate.

c 1964.
d Excludes North Ircland.
e 1965.

Sources:
(1) Exposé sur la situation sociale dans la Communauté en 1968, Commission of the European Communities. Annual Abstract of Statistics, 1968, CSO. UN Statistical Yearbook, 1966.
(2) Basic statistics of the Community, 1967, ECSO.

Table 10 Medical facilities per 100,000 population; end 1965

	Doctors	Pharmacists	Hospital bedsa
Belgium	145	64	796
France	116	43	$1,128^{b}$
Germany	145	33	1,065
Italy	168	65	786
Luxembourg	99	49	1,250
Netherlands	116		695
		1	<u>I </u>
UK	120^{c}	53c	1,009
USA	153	_	880

General note: Exchange rates: since all figures refer to 1967 or earlier (1968 figures were not available at time of going to press), all calculations have been made at the pre-devaluation (November 1967) rate of £1 = \$2.8. European Community Statistical Office. CSO: Central Statistical Office, London.

is earnings-related, was introduced in 1961, and the "earnings-related supplement" to sickness and unemployment benefits in 1965. And the new proposals for earning-related pensions with higher contribution and benefit levels, put forward in January 1969, will of course bring Britain much closer to continental practice.

Bearing in mind the great variety of social security structure, both between the different countries and often within individual countries, it is possible to make a few generalisations about the overall pattern for the major benefits.

Sickness benefit. In Germany, the Netherlands and Italy (and in France for miners), medical expenses are paid directly by the insurance funds, though the patient may have to make some contribution. In France, Belgium and Luxembourg, the patient has to pay his expenses and then reclaim, usually up to 70-80 per cent, from the fund. No Community country has a universal free health service on the British model. In addition to paying for medical costs, the schemes in all countries provide for payment of sick-pay.

Old age pensions. A national pension scheme with a flat rate benefit is found only in the Netherlands (and in France for miners). Elsewhere in the Community, the pension depends on the contribution paid, which in turn depends on the previous income level. Contribution and benefit rates vary from country to country, and the statutory schemes are often supplemented by extra occupational pensions, especially in France and the Netherlands where standard pensions are low. In all six countries pensions are linked to the cost-of-living-index. Britain has at present a flat-rate system like the Dutch, supplemented since 1961 by the graduated pensions scheme" which is wage related but does not cover all employed persons. As in France and the Netherlands, the low standard pension in Britain encourages private schemes, and in 1968 half of all employed persons, including 2/3 of all employed men, were involved in occupational pension schemes.

Family allowance. Family allowances vary greatly from country to country, being very large in Belgium and France. In Germany and Britain no allowance is payable for the first child, and in Germany none for the second child unless income is less than £65 per month. And the maximum age at which allowances are payable also varies.

		Family allowance £ s. per month		
	1 child	3 children		
Germany	_	4.9		
Belgium	5,16	21.15		
France	2.17	24.2		
Italy	3.5	9.16		
Luxembourg	3.19	12.12		
Netherlands	3.4	10.13		
UK	_	3.8		

a These 1967 figures are subject to later changes and have since been increased in some cases.

The existence of the European Community has not yet had any major effect on the social security systems

of the member countries, but the aim is a gradual levelling up of benefits and common rules of eligibility, etc. The national governments consult each other to ensure that new legislation takes this into account. Reciprocal arrangements are in force between all member countries on the provision of social security benefits to nationals of other member states, whether immigrant workers or holiday visitors. Thus, for example, an Italian working in Germany is entitled to full benefits immediately as a result of his earlier contributions to the Italian scheme; his wife, if she remains in Italy, can continue to draw full benefit in Italy while the husband is contributing to the German scheme; and his German contributions are taken into account in calculating his retirement pension when he returns to Italy.

Working hours

In the Community, as in Britain, the trend over the years has been for working hours to shorten, as a result of both statutory means and collective bargaining. In all six countries legal "norms" and maximums are laid down. Eight hours per day, and 40 hours per week is the norm in France, 8 and 45 respectively in Belgium, 8 1/2 and 48 in the Netherlands, and 8 and 48 in the three other countries. But in most cases this basic week has been further shortened through collective agreements; for example, a 40-hour week is now standard in most of the German motor industry. Also the figures above do not take account of overtime. Thus for October 1967 the average working week in all industries, including overtime, varied from 46.7 hours in France to 43 hours in Germany, a difference of 8 per cent. The variations between different industries are even greater, the most striking being between shoe manufacture and building materials in Germany (39.8 and 48.3 hours respectively, or 21 per cent) and the cotton industry and building materials in France (41.0 and 50.3 hours or 22 per cent). Fairly wide variations are particularly common in France and Italy. There are also of course differences within individual industries between different regions of countries, but these are on the whole less marked than those between industries.

In general one can say that in non-manufacturing industries such as mining and building, longer hours are worked than in manufacturing; and among the different manufacturing industries, the longest hours are found in food and drink manufacture, shipbuilding and certain other branches of engineering. The pattern is not on the whole very different from that one finds in Britain. (Table 4.)

It should be noted of course that shorter hours are not necessarily always an indication of rising living standards, since they may on occasion result from a deterioration of the economic situation of a particular industry, or country, which could lead to short-time working. Also, longer hours may in fact result from the desire to increase one's income by working overtime, but, it should be added, many experts argue that the very need to work extra hours and earn overtime

shows that wage-structures are out-dated and likely to discourage the efficient use of time.

Paid holidays for industrial workers in the European Community are much longer than in Britain or the USA. (Table 5.) And in all six countries they are based on a legal requirement. Since the 1930s a minimum number of days holiday has been fixed by law in France, Germany, Belgium and Luxembourg. The Italian law of 1919 establishes the right to holidays, but does not fix the length. And the Dutch provided a legal basis for holidays in 1966 In most cases, the number of days holiday for the majority of workers is in fact above the legal minimum as a result of collective agreements between unions and employers. In France for example, where the longest holidays are found, in 1962 the legal minimum of 3 weeks was extended for workers at the Renault car works to 4 weeks, and the practice spread rapidly through collective bargaining in other industries until it is now virtually universal. In Belgium too, the legal minimum of 2 weeks was increased to 3 weeks for most workers in 1965. In most countries young workers under 18 years are entitled by law to longer holidays than adult workers; and frequently age and/or length of service bring additional days holiday.

Annual holidays are paid in all six countries. In Belgium the legal minimum of two weeks holiday is, by law, at double pay (but not the third week). Thus in effect most Belgian workers get a holiday bonus equal to two weeks' pay. Dutch workers also receive a bonus equal to two weeks pay as a result of collective agreements. In Germany collective agreements now ensure that about one third of the work-force receives a bonus equal on average to 9 DM for each day's leave.

Public holidays are also more numerous in most of the Six, ranging from 6-7 days in the Netherlands to 17 days in Italy.

The trade unions of the six countries, which cooperate closely at the Community level, have adopted a joint programme which demands a 40-hour week and a minimum of four weeks annual holiday with double pay.

Where the money goes

Patterns of consumer expenditure vary greatly, both between countries and within each individual country, and reflect differing tastes and habits as well as different standards.

Within the Community, the 1963/1964 survey of 43,000 families (referred to above) showed a wide variation in the living standards of average families. The survey was in two parts, covering the families of farm workers, both wage-earning and self-employed, and those of wage- and salary-earners in other sectors (excluding self-employed), and involved completing detailed day-by-day questionnaires on spending on food, rent, clothing, household goods, and so on. Account was taken of consumption in kind, which is particularly important for farm families who grow much of their own food.

The results showed that for both farm and non-farm

families average spending was lowest in Italy. At the other end of the scale, non-farm families were most prosperous in Luxembourg and Belgium. Among farm families, however, the Dutch were the most prosperous, spending 80 per cent more than the Italians. Dutch non-farm families came second to last, but this is in part a reflection of relatively lower prices in the Netherlands, though this situation is rapidly changing.

Table 6 on the main items of private consumption shows that the general pattern is similar in the European countries listed. Within the Community, the country who differs most from this pattern is Italy, where a much larger proportion of consumer spending goes on food than in the other countries, but a smaller proportion goes on clothing, furniture, etc. This is a reflection of the undoubtedly lower standard of living, but, as far as clothing and furniture are concerned, is probably a result in part of the warmer climate. In fact it is perhaps wrong to regard Italy as a single unit for this purpose, since the differences of standards between the north and south of Italy, and the rest of the Community.

The greatest differences in consumption expenditure between Britain and the Community concern food, drink and tobacco, which taken together is higher in Britain because of the high rates of tax on alcoholic drink and tobacco, though the British figure for food alone would undoubtedly be lower than that for the Community; and secondly transport, reflecting the higher car ownership in Britain (see also table 11). The greatest differences of all are between the general European pattern and that in the USA where the proportion of consumer expenditure on food, drink and tobacco is about 35 per cent lower than the Community average, and that on transport is 40 per cent higher, reflecting a higher overall living standard which enables families to eat well and still have enough left over to spend more on non-essentials than is possible in most European countries.

Conclusion

The conclusion to be drawn from the above data, and that included in the Statistical Annex, is that overall living standards do not differ greatly between Britain and the six Common Market countries. Far more significant are the differences which exist within all countries between people working in different industries (the greatest gap is that between industrial workers as a whole and agricultural workers), and between people living in different regions.

The most striking contrast is between the north and south of Italy, but marked differences exist in all countries: for example, in France, between the Paris area on the one hand, and the poor agricultural areas of the south west and Britanny and the declining textile and coal-mining areas of the north east on the other; or in Britain between on the one hand the southeast and the midlands, and on the other the problem industries and uneconomic farms found in many parts of northern England, Wales and Scotland.

However, to put matters in a world perspective it is salutary to remember that half the population of South America is estimated to earn on average less than £50 per year.

The chemical industry in the European Community and the United Kingdom

The chemical industries are concerned with the separation of the elements of materials and to use them in this state, or combine these elements to create new substances. Thus, the characteristics of substances are altered, rather than their shape, as in most other industries. Many of the processes employed have long been the object of man's ingenuity and although much of the knowledge has been available for a long time, it is only during the last century or so that "chemicals" have become an industry in the real sense of the term. In this comparatively short period of time, the industry has made rapid and remarkable progress, both in material growth and in technical knowledge and skill. It now occupies a key place at the centre of every advanced industrial economy, accounting for an increasing share of total manufacturing output. Other industries increasingly depend on the chemical industries.

It is interesting to note that the chemical industry is one of the most far removed from our own everyday lives, although it may not appear so at first sight. In Britain, for example, only about 20 % of the products of the industry are on sale to the general public. Half go to other sectors of industry as raw materials, and some 15 % to other parts of the chemical industry for further processing, whilst the balance of about 15 % is sold abroad. This, together with the thought that chemicals smell (and only some do so), may poison the environment, and are often dangerous to handle, may give rise to the ambivalent attitude that many of us have towards the industry, compared with many other industries.

The chemical industry is still in the stage of rapid development, and generally defined as a growth industry. Half of its current products were unknown ten years ago. As more and more complex products are evolved, they meet demand in an ever more efficacious way by answering particular needs more exactly. Moreover, the synthetic products of organic chemistry, such as plastics and synthetic rubber, not only replace natural products, but find new uses proper to themselves. A further source of the dynamism of the modern chemical industry is that, because it is chiefly concerned with changing substances in liquid, gaseous or powder form, it offers very great opportunities for automation and demands massive capital investment.

The manufacture of chemicals falls into two main groups. The heavy chemical industry is concerned with the preparation of acids and alkalis for use in the other chemicals of manufacture as well as in other industries. The principal products of this group are sulphuric, hydrochloric and nitric acid, the main alkalis being caustic soda and carbonate of soda. Coal and petroleum also provide important by-products for the heavy chemical industry. The second group, the chemical-products industry, includes soap and detergent manufacture (using caustic soda and fats or oils), fertilisers, plastics, synthetic fibres, and pharmaceuticals and cosmetics.

Location

General factors

Many of the raw materials used in the chemical industries are bulky. As a result they often exert the dominant influence in location of the industry. Depending on the

type of product made, however, the market may exert a greater pull. Broadly, there are three types of location:

- at a raw material source within the country. Natural gas for sulphur extraction at Lacq, Southern France, and salt deposits near Nancy, Eastern France and Cheshire, Northern England, serve to illustrate this.
- at the point of import of bulky raw materials, where break of bulk occurs. Coastal and river-side location results. The chemical industries of Antwerp, Rotterdam, Genoa, Rouen and London illustrate this.
- near the market for the products. Examples of this are: bleaches and dyes near the main textile areas of Lancashire and Lombardy Plain; dyestuffs, tanning materials and synthetic resins in the boot and shoe producing regions of Northampton and Leicester; pharmaceuticals and photographic materials near to the large markets of Paris, Milan and Brussels; fertilisers and crop-protection chemicals near to the main agricultural regions of Lincolnshire, East Anglia and the Börde.

The coalfields provide one of the main concentrations of the heavy chemical industry for two reasons. First, the use of distillates from coal, such as coal-tar and dyestuffs, as raw materials. Secondly, the use of coal as a source of power in chemical works. This makes the location of a raw material (such as salt or potash) near to a coalfield an added attraction for location of chemical firms, and often causing a coal-textiles-chemicals complex to develop. Petroleum is exerting an increasingly strong pull on location of the newer and rapidly expanding petrochemical industry. Products such as ethylene and butadiene, obtained from petroleum distillation and processing are used in the manufacture of a wide range of products. including synthetic fibres, plastics and butyl rubber. Some of this manufacture (especially of the "raw materials") is undertaken by the oil companies and falls outside the scope of this paper and the statistics included. Much, however, is undertaken by chemical firms located near to the refineries. Such is the case on Thames-side, at Europort and Rotterdam, at Antwerp, and at Le Havre.

Location of the industry in EEC and UK

There are many branches of the chemical industry, and location tends to be widespread, especially of the light

chemical industry. The following is a necessarily brief description, emphasising the areas where the industry is concentrated, or in some cases, where it is the main industry in an otherwise essentially non-industrial area. As far as possible, the examples used illustrate the points made in the first part of this section.

- 1. United Kingdom. Industry located on raw materials include salt in Cheshire (centred at Nantwich) and Teesside (which includes anhydrite deposits, with centres at Wilton and Billingham). Other centres are on the major coalfields, notably the Northumberland and Durham. Coastal locations are important because of the large quantities of raw materials imported. Merseyside is the main centre, located especially at Widnes and Runcorn, between the Lancashire coalfield to the north and Cheshire salt to the south. Other centres include the North-East, South Wales and Severn Estuary. The petro-chemical industry is also refinery, and therefore, coast orientated. Major centres include Thames-side (Shellhaven), Severnside (Avonmouth), Merseyside (Stanlow) and Southampton Water (Fawley). Cosmetics and pharmaceuticals are made in Slough and Osterley for London, the Trafford Park estate serving Manchester and Liverpool, and Nottingham. Finally, the market-orientated dyestuffs producers, including St. Helen's supplying the Lancashire cotton industry and Huddersfield supplying the West Riding woollen industry.
- 2. **Belgium.** Heavy chemicals are highly developed on the Sambre-Meuse coalfield (mainly at Liège) and on the Kempen coalfield. Antwerp has developed a large industry based mainly on oil imports and potash from Alsace. Other major centres are Ghent (for the textiles industry and agricultural activities) and Brussels (for the textiles industry, and pharmaceuticals for a large population).
- 3. Netherlands. Coal provides for a chemical industry in Limburg, with a concentration near the Maurits Colliery 10 miles north-east of Maastricht. Peat, although rapidly becoming depleted, caused the industry to grow around Emmen. Salt is found in great quantities at Boekelo and Hengelo, and a large plant is located at the former. Of greatest importance in the Netherlands is the import of oil. Huge refinery development between Rotterdam and Europort has led to a complex of petro-chemical manufacture. Similar developments, on a smaller scale, have occurred in Amsterdam (pharmaceuticals are located here also) and IJmuiden.
- 4. Luxembourg. The industry here is very small. Some dyestuffs for the textiles industry and tanning materials, for shoes and gloves are made, but most of the country's needs are imported.
- 5. France. Much of the industry is based on raw materials obtained within the borders. Sulphur extraction from the natural gas of Lacq and St. Marcet, both in the Pyrenean foothills. Potash deposits for fertiliser production to the north-west of Mulhouse (Alsace). Salt deposits in Lorraine at Sarralbe and Dombasle (both east of Nancy), as well as salt-pans near Marseilles and Biarritz. Coal of the Nord coalfield (used in the industry at Béthune, Douai, Lens and Liévin). A small industry has developed on the Moselle coalfield and at St. Etienne (supplying the Lyons textile industry with dyestuffs) in the Central Massif. An electro-chemical industry has developed using HEP from the Alps and Pyrenees. In the Alps, Argentière (Durance

Valley) and in the Pyrenees, to the south of Lourdes. Nitrogen fixation is a major activity. Petro-chemicals have developed along the Seine at Le Havre, Rouen and Paris, and at Marseilles. Pharmaceuticals and cosmetics are found in Paris and Lyons (with explosives and dyes for the textile industry also at the latter).

- 6. West Germany. There is a wide range of chemical production, based originally on coal, lignite, salt and potash deposits. Now, much of the industry is based on oil. The Ruhr and Saar coalfields are the main areas for coal-based chemical production. Major centres include Duisburg and Düsseldorf, both on the Rhine. Petroleum, potash and salt are found mainly in Lower Saxony (along with coal), with centres at Hanover and Brunswick. Rhineland forms a major axis of Europe's chemicals industry, reflecting the ease of importing heavy chemicals and exporting the produce along the waterway. Centres include Mannheim-Ludwigshafen, Frankfurt and Leverkusen. The petrochemical industry is located mainly in Hamburg and along the Rhine (which is served by pipelines from Rotterdam and Wilhemshaven, mainly to the Ruhr, but extending as far south as Frankfurt). Some development has occurred in Karlsruhe and Ingolstadt (both served by the South European Pipeline from Lavera), and similar developments will occur when the pipeline from Genoa to Munich and Ingolstadt is completed.
- 7. Italy. The industry produces a wide range of chemicals, and tends to be widespread. Generally lacking in coal, there is no coalfield based industry. Coal imports are handled mainly at Genoa, but also at Porto Marghera and Piombino, and associated industries have developed. Other raw material based industries are on the sulphur deposits of Central Sicily (processed at Ragusa) and in Emilia-Romagna (centred at Cesena). Local salt forms the basis of the industry at Leghorn and Florence. Petroleum is found near Ragusa and in small quantities near Cortemaggiore. Natural gas is being developed rapidly, especially to the north of the Apennines. Centres are at Cortemaggiore and Ravenna. Chemicals based on HEP are mainly in the Alpine foothills, especially at Bolzano, where nitrate fertilisers are prepared. A similar plant is in the Apennines at Terni. The main oil refineries are located on the coast and have given rise to a large petro-chemical industry, especially at Ravenna, Genoa, Naples, Augusta, Ragusa and Bari. Milan is the main chemical centre of Italy, employing onethird of the total workers of the chemical industry. Turin is another very important centre. Both produce a wide range, including dyestuffs for the textile industries and pharmaceuticals.

Production

In the last decade or so, the chemical industries of Europe and the USA have expanded faster than other industries. In the EEC between 1958 and 1967 total production of manufacturing industry rose by 70 % and that of chemicals by 153 %. Comparable figures for UK were 32 % and 75 %, and for the USA 73 % and 113 %. Although growth in the USA has been slower than in the EEC, the turnover of the industry there is very much larger, as is shown in the following table:

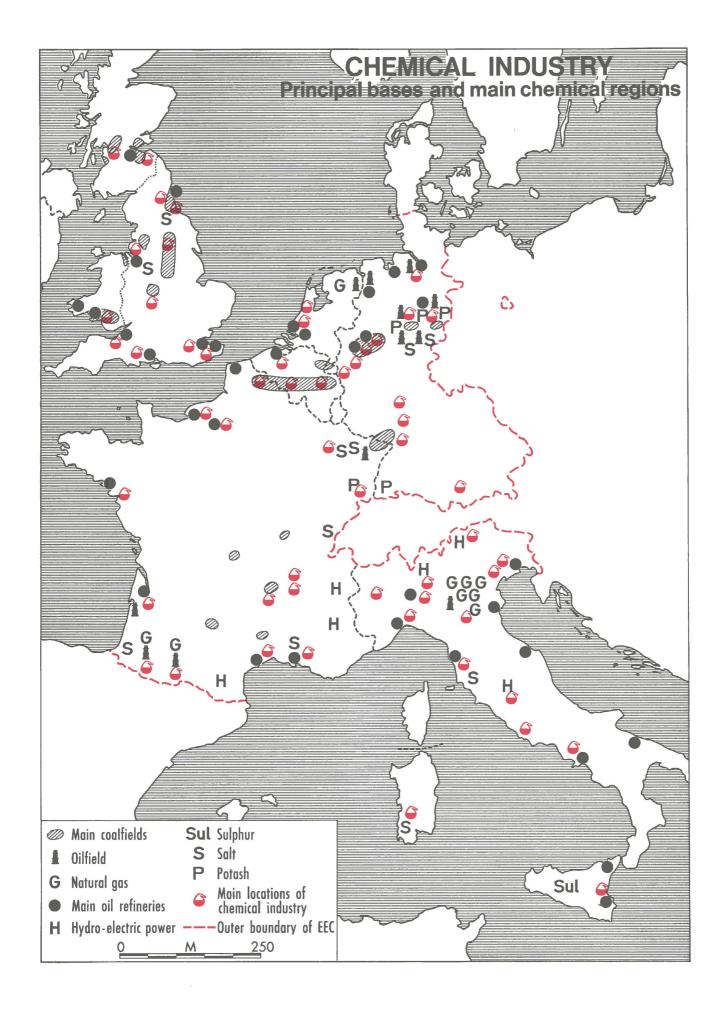


Table 1

Estimated turnover of the chemical industry in 1967
(\$ million)

West Germany	9,450	
France	6,300	
Italy	5,600	
Netherlands	1,800	
Belgium	1,170	
EEC total	24,320	
 UK	7,000	
USA	40,500	
USSR	12,500	
Japan	7,850	
World total	140,000	

The increase in production everywhere has been most marked in the highly technological parts of the industry, such as plastics. Synthetics fibres and heavy organic materials have made above average progress. Growth has been below average in heavy inorganic chemicals, nitrogenous fertilisers and dyeing, tanning and colouring materials.

The West German chemical industry is the largest in the EEC and, indeed, in Western Europe. It ranks third in the world after the USA and USSR. Its growth between 1958 and 1967 was 134 %, more than twice the growth rate of German industry as a whole. It is the second largest German industry, after mechanical engineering. The French industry is second in EEC and sixth in the world. It grew by 131 % between 1958 and 1967. The third EEC chemical industry, the Italian (7th in the world) grew by 212 % in the same period, closely followed by the Dutch with 207 % (although this figure includes syntheticfibre production, usually considered as part of the textile rather than the chemical industry). Belgium comes last in the EEC (excluding Luxembourg), both as regards the size of its chemical industry and its growth, which was 77 % between 1958 and 1967. In all five countries the growth in chemicals has been considerably higher than that in manufacturing industry as a whole.

As shown in Table 1, the British chemical industry, with an estimated turnover in 1967 equivalent to \$7,000 million, comes fifth in the world, having been overtaken in that year by the Japanese. In terms of output, it comes second only to the construction industry and is 15 % larger than mechanical engineering and twice as big as electrical engineering. It contributes over 8 % of total manufacturing production. In recent years its average annual growth rate has been 5.3 %, compared with rates of about 2.8 % for both total industry and total manufacturing industry.

Structure

1. Investment and research

The chemical industry is among the most capital intensive of all industrial sectors. Investment and research are the keys to its future. Although its raw materials are often cheap, its highly complicated plant and equipment are very expensive. Moreover, the latter need to be replaced fairly frequently, either because they have a short working life (many chemical materials are corrosive), or because the continual discovery of new techniques and processes rapidly makes them obsolete.

In 1966, the chemical industry in the EEC invested a record sum equivalent to \$2,500 million, against an estimated turnover of \$21,900 million. The highest investment rates were in Belgium and Italy, where the industry accounted for 12 % and 16 % respectively, of total investment in manufacturing industry. In the rest of the EEC the investment ratio varied from 8 % to 10 %. Investment has also been heavy in the UK. In 1966 the total reached a peak of £260 million, and was the highest achieved in all industrial sectors. Total capital investment in the UK chemical industry in the last ten years has been about £1,800 million.

The chief aims of this massive outlay are to increase productive capacity and to increase the efficiency of capacity by building larger productive units. In chemicals, above all, it is economics of scale that are a truly decisive factor. It has been shown that unit costs in a really large plant are less than half those in a plant one-third of the size. Taking petro-chemicals as an example, it is estimated that every \$3,500 invested corresponds to a yearly turnover of \$2,700, with the cost of new plants ranging from \$5 million, to \$30 million. Only by working on a large scale can the full benefits of profitability be attained. As a further means of reaching optimum profitability, multiple shift working is usual in almost all branches of the chemical industry for 350 days a year.

Such a great expansion of modern plant, accompanied by a high degree of automation, explains why the employment in the industry has remained comparatively stable. Rather more than one million people work in the EEC chemical industry, about 17 % more than in 1958. Although other factors have to be taken into account, the difference between growth in production and growth in employment does indicate a marked rise in productivity, a result of larger productive units and their more efficient use. In the future the labour force will become proportionately smaller, compared with other industries. Automation will also tend to increase the proportion of skilled and management personnel employed. In the EEC as a whole, the industry now accounts for 3.2 % of total employment, ranging from 3.9 % in the Netherlands to 2.4 % in Italy. The British chemicals work force is comparatively larger than that in the EEC (in relation to turnover), but its increase in the last decade has been only just over 4 %. The industry now accounts for 2 % of total employment. Using the payroll/turnover ratio as a somewhat crude index of productivity, it can be said that the productivity of the USA chemical industry is double that of the European.

Of comparable importance to capital investment for the long-term future of the chemical industry is expenditure on research development. It is the research that provides the dynamic for the prosperity and competitiveness of the industry in the world context. Nevertheless, research expenditures in the EEC are absolutely and relatively lower than in the USA. This situation applies to all the European high-technology industries, and is very serious in terms of future European development and competitive strength. Moreover, because there is no co-ordinated European science policy, there is a great deal of wasteful and costly duplication of research. Research in the British chemical industry reaches a level of £55 million (\$130 million) per

Foreign investment in the EEC chemical industry is particularly important in the Netherlands and especially in

the Rotterdam area where the many oil refineries have encouraged the building of a wide range of chemical plant, many of them from the USA. Most of the big USA chemicals companies are also represented in the other EEC countries. It is in the chemical industry that US investment is growing most rapidly, at least in relative value. Of a total of US corporate manufacturing investment in the EEC in 1967 of \$1,450 million, some \$380 million was in the chemical industry, compared with \$44 million in 1960.

In Britain (apart from the oil companies, which lie outside the field of this survey), most US chemical investment is concentrated in pharmaceuticals and cosmetics. In 1965, these net assets totalled £62 million (\$150 million) and £11 million (\$26 million) respectively, or about 4.5 % of US-owned assets in the UK. The only US chemical company to figure among the 200 largest UK industrial firms is Monsanto, ranking 191st. On the other hand, US companies supply over 80 % of the British market for carbon black and colour films, and over half of the cosmetics and toilet preparations on sale and of drugs sold to the National Health Service.

2. Size of firms

Economies of large-scale production have already been mentioned. Different countries within the EEC and UK benefit from these economies to different extents. Generally, the large number of small firms in EEC and UK makes effective competition with the US giants difficult.

Table 2

Some large chemical industries
(1967)

Industries	Countries	Sales (millions of \$)	
1. Du Pont de Nemours	US	3,102	
2. Union Carbide	US	2,456	
3. Imperial Chemicals	UK	2,349	
4. Hoechst	Germany	1,650	
5. Monsanto	US	1,632	
6. Bayer	Germany	1,584	
10. BASF	Germany	1,259	
15. Shell Chemicals	UK/Netherlands	883	
16. Montecatini-Edison	Italy	860	

In Germany, the three largest firms (Hoechst, Bayer, BASF) share 40 % of the German chemical industry, and about 20 % of that of the EEC chemical industry. In France, production is much less concentrated, sixty firms sharing 50 % of the industry. The value of mergers in achieving economies of scale is realised throughout the EEC. In Italy, one massive combine (Montecatini-Edison) now accounts for 75 % of the turnover of the Italian chemical industry. Similar mergers are taking place in the Netherlands and Belgium.

Mergers at Community level rather than national level are now needed to compete with US and UK competition. To do this at present is difficult because of taxation problems and difference in the laws of the EEC countries. The only success in this field has been a "merger" (in effect rather than in strict law) between the German and Belgian companies Agfa and Gevaert, which has resulted in the largest European enterprise in the field of photographic products. (Not only is this the only example of a transfrontier merger in the chemical industry, but the only one

in any industry within the EEC.) Apart from mergers, firms have formed joint subsidiaries in other EEC countries, and made agreements (especially in research), where these do not contravene the rules of the Treaty of Rome.

The UK chemical industry is dominated by ICI which, in terms of capital employed, ranks third among all British industrial firms and fourth in Western Europe. In terms of 1967 sales, it ranked third of the world chemical firms, behind the US giants, Du Pont de Nemours and Union Carbide. Below ICI is a wide range of size and function in the UK chemicals industry.

Foreign trade

Exports including those to other EEC countries, now account for about a quarter of the turnover of the EEC chemical industry as a whole, and have played an important part in the growth of the industry. Intra-Community trade has increased more rapidly than trade with third-countries, as would be expected with the reduction and ultimate elimination of tariff barriers and quantitative restrictions. The average annual increase between 1958 and 1965 in intra-EEC chemical trade was about 19 %, but the proportion of total intra-EEC trade accounted for by chemicals remained steady at 7-8 %. The volume of this trade rose from \$500 million to \$1,600 million during this period. EEC exports of chemical products to third-countries doubled between 1958 and 1965 (from \$1,570 million to \$3,160 million, with an annual average increase of 10.5 %. The proportion of total third-country exports taken by chemicals rose in this period from 10 % to 12 %.

Imports from third-countries grew rather faster (by 120 % over the period) and their value rose from \$610 million to \$1,350 million. As a proportion of third-country imports, chemicals accounted for 4 % in 1958 and 5 % in 1965.

The following table shows the foreign chemical trade of the EEC countries:

Table 3

EEC foreign chemical trade in 1967

(including intra-Community trade) (\$ millions)

Country	Chemical industry turnover	Exports	Imports	Exports as a percen- tage of turnover
West Germany France a Italy Netherlands Belgium	9,450 6,300 5,600 1,800 1,170	3,215 1,055 709 1,165 643	1,374 1,015 752 840 578	34 17 8 64 55
EEC total	24,320	6,087	4,559	25

a Excluding franc zone trade.

The pattern of international chemical trade for the UK is similar. The industry's products account for about 10 % of exports and 5 % of imports. Imports have been growing faster than exports, but the favourable net balance is still large, as in the case of the EEC. In 1967 UK chemical exports reached a record of £493 million (\$1,180 million). It is estimated that in 1968, due to increased volume and the advantages of devaluation, the export total will have reached £600 million (\$1,440 million).

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